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**ASSESSING WORK AND FAMILY BALANCE AMONG
VOLUNTEERED DOCTORS IN A VIRTUAL HEALTH COMMUNITY**

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**DOCTOR OF PHILOSOPHY
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Abstrak

Komuniti kesihatan maya yang ditubuhkan oleh pasukan doktor perubatan untuk meningkatkan perkhidmatan kesihatan semakin popular di Internet. Walaupun terdapat banyak faedah termasuk fleksibiliti dari segi masa dan tempat, doktor dalam talian berdepan dengan masalah keseimbangan kerja-keluarga (WFB). Kesan sempadan maya yang wujud akibat teknologi pengkomputeran terhadap WFB masih belum dapat dijelaskan, di mana hanya terdapat beberapa kajian yang mendalami permasalahan berkaitan sempadan yang kabur ini. Selaras dengan jurang kajian tersebut, kajian ini bertujuan untuk menilai pengalaman doktor yang menjadi sukarelawan dalam talian untuk menyeimbangi pekerjaan dan keluarga. Penilaian dibuat menggunakan Teori Sempadan Pekerjaan-Keluarga untuk mengenal pasti peranan dan strategi yang digunakan oleh doktor sukarelawan dalam talian bagi mencapai WFB. Kajian ini menggunakan reka bentuk dan metodologi kajian kes tunggal kualitatif. Teknik temu bual separa berstruktur dan analisis dokumen dilakukan untuk meneroka peranan dan strategi doktor. Data bagi kajian ini dianalisis secara tematik. Hasil kajian menunjukkan bahawa doktor adalah peserta utama dalam bidang pekerjaan dan keluarga yang membolehkan mereka mencapai WFB. Selain itu, mereka dapat menetapkan sempadan di antara pekerjaan dan keluarga dengan menerapkan empat strategi iaitu: memanfaatkan penggunaan ICT, penyelarasan pengurusan masa, memanfaatkan orang lain dan memberikan keutamaan kepada hal-hal lain. Kajian ini telah menyumbang kepada teori Sempadan Pekerjaan-Keluarga dengan mengetengahkan tekad pekerja dalam mengintegrasikan ICT dalam pekerjaan dan keluarga mereka bagi mencapai keseimbangan di antara kerjaya dan keluarga. Penemuan ini menyokong pengintegrasian teknologi Web 2.0 ke dalam persekitaran komuniti kesihatan maya bagi mengukuhkan komunikasi maya dan mewujudkan persekitaran yang serupa dengan interaksi secara bersemuka.

Kata kunci: ICT, Sukarelawan dalam talian, Komuniti maya, Sempadan maya, Teori Sempadan Pekerjaan-Keluarga

Abstract

Virtual health community, established by a team of medical doctors to improve healthcare services, is gaining popularity in the Internet. Despite many benefits including flexibility in terms of time and place, online doctors are facing work-family balance (WFB) issues. The effects of the virtual border created by computing technologies towards WFB remain inconclusive, whereby only a few studies managed to delve into this blurring boundaries. This study aimed to assess the experience of doctors who were volunteering online in balancing work and family. The assessment was conducted by applying the Work-Family Border theory to identify the role and the strategies used by the online volunteering doctors in attaining WFB. This study used qualitative single case study research design and methodology. The semi-structured interview technique and document analysis were carried out to explore the doctors' roles as well as their employed strategies. Thematic analysis was performed to analyze the data. The findings indicate that the doctors are the central participants in the work and family domains that allows them to achieve WFB. In addition, they are able to establish boundaries between work and family by implementing these four strategies: leveraging ICT, adjusting time management, utilizing others and prioritizing. This study contributes to the Work-Family Border theory by highlighting the determination of employees in integrating ICT into their work and family lives and addressing the achievement of balance. The findings support the integration of Web 2.0 into a virtual health environment to strengthen virtual communication as well as to create a more supportive environment that is similar to the face-to-face interaction.

Keywords: ICT, Online volunteer, Virtual community, Virtual border, Work-Family Border theory

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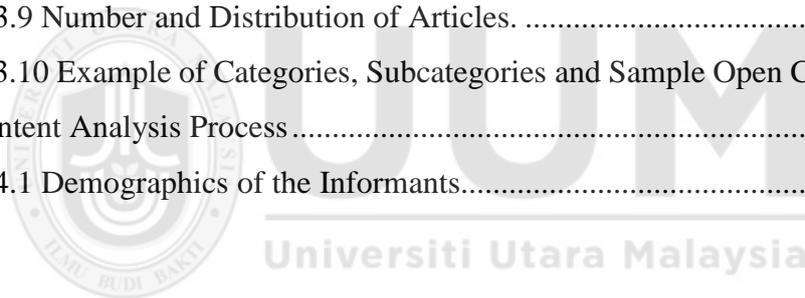
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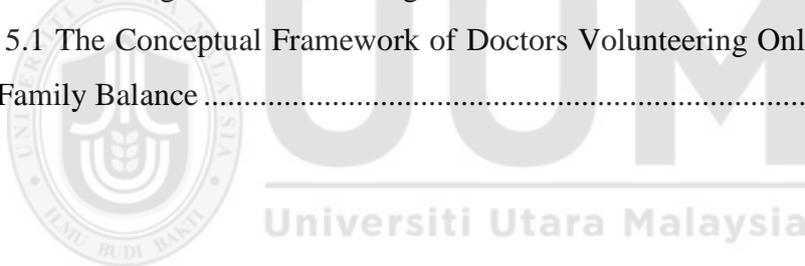
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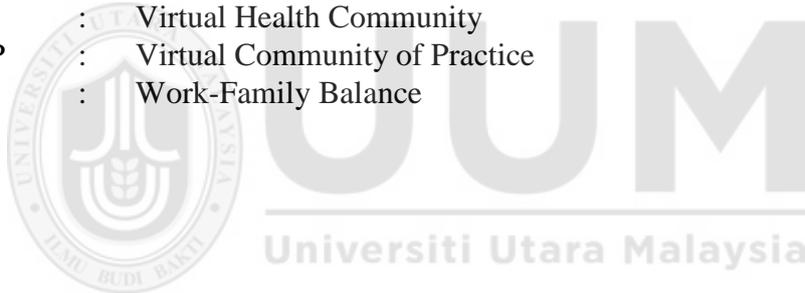
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List of Abbreviations

CSP	Case Study Protocol
DB	: Doktorbudak.com
FB	: Facebook
ICT	: Information and Communication Technology
IS	: Information System
JPA	: Public Service Department
MAMPU	: Malaysian Administrative Modernization and Management Unit
MMC	: Malaysian Medical Council
MO	Medical Officer
MOH	: Ministry of Health
OV	: Online Volunteer
P2D	: Patient-to-Doctors
UNDP	United Nations Development Program
UNV	United Nations Volunteers
VHC	: Virtual Health Community
VCoP	: Virtual Community of Practice
WFB	: Work-Family Balance



CHAPTER ONE

INTRODUCTION

1.1 Background

Information and communication technologies (ICTs) encompasses mostly every profession, from gaming to government and influences the functioning of almost all category of employees, from supervisors to doctors. ICT are now central to professional career, community life, social and personal relationships as well as connecting everyone through a range of devices at home and work, in open spaces, and while on the move. The above, combined with the globalisation of existing world economies and the rise of new large economies suggests people are experiencing a major restructuring of work practices and a massive transformation of expertise, job structures, and jobs characteristics (Webster & Randleiet, 2016). As an example, the phenomenon of online volunteering among employees mediated by ICTs are the creation of virtual work.

The concept of virtual work has conjures up employees' life experience in cyberspace and is rooted in the physical world. The situations has change the way employees communicate through space and time, collaborate and connected, hence driving the growth of virtual work. In this new ways of working, employees who adopt virtual work arrangements admit that the traditional workplace and the increased use of the home as a family and work space has complicated implications (Webster & Randleiet, 2016). Employees' boundaries between work and family have faded to the point that it is no longer sufficient to characterize what constitutes work (Alony et al., 2019).

Current virtual work studies have shown that people's lifestyles have changed in the modern era (Eisenberg & Krishnan, 2018; Srivastava & Chandra, 2018). The evolution of Web 2.0 has created a paradigm shift by transforming the Web into a participatory channel to enable users to contribute and produce new content rather than just consuming the available content. A virtual community which has witnessed rapid growth, is an example of an ICT-based application in which users from various locations collaborate using Web 2.0 and social media platforms (Antonacci, Colladon, Stefanini, & Gloor, 2017; Zha, Zhang, Yan, & Zha, 2015). Virtual community is formally defined by Rheingold (1993) as "a group of people who may or may not meet one another face-to-face, and who exchange words and ideas through the mediation of computer bulletin boards and networks". This indicates that the existence of a virtual community in the cyber-place allows individuals with similar intention or interest to not only to interact electronically but also to perform their routine tasks in different manner.

Today, netizens are witnessing the mushrooming of a numerous virtual communities the Internet. One of the communities that are gaining the attention of users, particularly among medical doctors and patients, is the health related virtual communities. Specifically, this type of virtual communities are known as the virtual health community (VHC) where doctors established different forms of ICT facilitated platform in providing health related information and consultation with the aim of improving healthcare services (Liu, Zhang, Sun, Jiang, & Tian, 2019). These virtual communities created new opportunities for doctor's engagement, as they are the online

volunteers (OV) who are identified as the core of the cyber-communities. Among the health related tasks that can be conducted remotely via this virtual channel are offering feedback, adding information, recruiting volunteers, and moderating online discussion. Having a number of voluntary online doctors helps in improving the landscape of the community's website and providing crucial roles of the community's subset (Jochum, & Paylor, 2013).

The act of volunteerism on the Internet among doctors, also known as online volunteering, is now becoming more prevalent and widespread practice for doctor's engagement as alternative to the onsite (traditional face-to-face) volunteering. This form of virtual work enable work to be conducted in different locations and structures than the traditional way (Boavida & Moniz, 2020). Moreover, Boavida and Moniz (2020) claim that this type of work allows for a better time management and allows for greater management of work and personal lives. However, according to Graves and Karabayeva (2020), Holts (2013) and Webster and Randle (2016), the debate about virtual work has resulted in a number of studies that discuss issues such as the blurring of the lines between work and non-work, the extending of work outside the traditional workspace, paid or unpaid work (e.g., voluntary work), and the uncertainty concerning the value establishment. As a result, assessing the work and family arrangement which involves a broad range of activities among online volunteered doctors, is valuable.

In general term, online volunteering refers to “a volunteer who completes tasks, in whole or in part, off-site from the organization being assisted, using the Internet and a home, school, telecenter or work computer or other Internet-connected device” (Cravens, 2014). By integrating the ICT used by online volunteers (from smartphone to social media tools), the virtual work arrangement facilitates online volunteer in organizing their jobs, providing the autonomy to select the best work setting in fulfilling individual’s work and family needs (Conroy & Williams, 2014). Other benefits may include improved mental wellbeing (McDougle, Handy, Konrath, & Walk, 2014), life satisfaction (Wang, Ge, Zhang, Wang, & Xie, 2020; Song, Gu, & Zuo, 2019), happiness (Dawson, Baker, & Dowell, 2019; Lee, 2019) and enhanced self-esteem (Stukas et al., 2016).

Regardless of the above benefits offered by the virtual platform, online volunteering is not necessarily suitable for everyone (Seddighi & Salmani, 2019) especially those employees with demanding career such as doctors. Scholars have raised a number of issues that has challenged the successful implementation of online volunteer in attaining a well-balanced life such as dual-earner couples who are juggling with various work and family responsibilities, organizations with long working hours cultures, as well as the remarkable growth of ICT advances that keep employees attached to work and family at all times (Benito-Osorio, Munoz-Aguado, & Villar, 2014; Schlachter, McDowall, Cropley, & Inceoglu, 2018). Therefore, the extent to which an individual is suitable for volunteering online may be importance in determining the effectiveness of online volunteering (Culp, 2013). Authors such as

Haski-leventhal and Meijs (2011) and Mescher, Benschop and Doorewaard (2010) also has pointed out that individuals need suitable personal qualities as volunteer that allow them to combine different responsibilities in achieving balance.

Moreover, researches had also identified work and family conflicts as a main problem for individuals who use ICT for volunteering online (Schlachter, McDowall, Cropley, & Inceoglu, 2018). Conflict happens when the demands of multiple roles (e.g., employee, spouse, online volunteer) which encompasses limited time, energy and commitment pressures with each other (Allen, Johnson, Kiburz, & Shockley, 2013; Cleave and Doherty, 2005; Greenhaus & Powell, 2006; Wang, Gao, & Lin, 2019). The persistent use of ICT has great effects on the way work and family life are structured which caused the online volunteering doctors the difficulties in splitting both activities due to the 'borderless' aspect (e.g., no definite time and place) (Yang, Zhang, Shen, Liu, & Zhang, 2019). The online volunteering works may be performed by doctors anywhere at any time regardless whether at the workplace or home. This style of working, which practice the 'always-on-culture' belief, inherently creates more blurring restrictions between work and family (Leung & Zhang, 2017; McDowall & Kinman, 2017; Wet & Koekemoer, 2016).

Although the nature of online volunteering is slightly different from that of the onsite volunteering (face-to-face volunteering), both types of volunteering require real-time commitment (Danaiata, Gligor-Cimpoieru, Hurbean, & Munteanu, 2013; Ellis & Cravens, 2000; Schlachter, 2018). These researchers pointed out that performing

online communication and seeking information on the Internet have extended into non-working time that eventually can affect the balance between work–family responsibilities. Technically, the online volunteer’s workload is almost similar to the onsite volunteer. Nonetheless, the ability for OV in handling the work–family sense of balance is yet to be explored.

Even though living in an environment equipped with various new technologies and reliable connectivity, Malaysians are still struggling to improve the work-life balance. Most recent report by Kisi (2020) indicates that Kuala Lumpur was ranked last among the 40 cities chosen as the ‘Best Cities for Work-Life Balance 2019’. Prior to that, the Malaysia Psychological Wellbeing Index survey conducted in 2018 revealed that government servants are experiencing high level of stress due to overworked, which can result to a lower work-life balance (Thye, 2019). Therefore, as the government is progressively recognizing the significance to uphold the sense of balance between work and family (“Rohani Calls for Employers”, 2016), it is important for considering a better balance between both domains by those employees who are opting to volunteer online (Bavafa & Terwiesch, 2019).

Although the impact of ICT usage on the employee’s work-family balance has been reported in other countries such as French, United Kingdom and China (Bavafa & Terwiesch, 2019; Schlachter et al., 2018; Yang et al., 2019), it is not known whether the findings can be applicable to Malaysia due to different nature and culture. The vast majority of studies reviewed indicate that using ICT is linked to adverse effects,

though there may be some significant benefits. According to a recent study by Bavafa and Terwiesch (2019), the use of ICT for multiple channels service delivery has raised pressures on doctors' time, resulting in increased burnout and a major impact on work-family balance. Schlachter et al. (2018) conclude that employees must find different ways to use ICTs and work more effectively with them, particularly when using them outside of normal working hours.

The work-family balance is defined by Kirchmeyer (2000) as “the extent to which individuals are equally engaged in and equally satisfied with work and family roles”. The failure of balancing the roles of work and family will usually associated with negative effects such as marriage failure, ill health, job dissatisfaction, fatigue, and lower life satisfaction (Yusuf & Hasnidar, 2020; Karkoulian, Srour, & Sinan, 2016; Hamid & Amin, 2014). Despite the numerous studies on work-family balance, research on how employees manage to balance work and family while performing their unpaid commitments for online volunteering remains inconclusive. Most of the research on work-family balance has been limited to the aspects of work and family. Unfortunately, current workforce is dynamic, and employees may put a greater value on non-work domains than the family (such as online volunteering). Hence, the issues of such balancing have become a serious focus that needs more attention than before (Mustapa, Noor, & Abdul Mutalib, 2018) especially involving medical doctors who will be volunteering online. The aim of this study is to assess the experience of doctors who utilized ICT to perform online volunteering by examining the strategies that helps

them to negotiate the border around their work and family life to attain a sense equilibrium.

The specific case selected for conducting this study is the DoktorBudak VHC, which represents one of the fastest growing virtual health communities in Malaysia. This community is chosen since after six month being launched, the website has reached 250,000 hits page views, over 17,000 Facebook fans, and more than 2,000 followers on Twitter (Yong, 2014). The DoktorBudak.com (DB) is run by a group of OV, comprised of experienced pediatricians and pediatric-related specialists from both government and private hospitals. Parents and caregivers are given the opportunity to ask questions about children's health through the DB website and its social media-links, such as Facebook and Twitter.

1.2 Problem Statement

Although doctors volunteering online play important role in the success of virtual health communities (Guo, Guo, Fang, & Vogel, 2017), it has caught little interest in the Information Systems (IS) researches compared to other. However, researchers have recently become more interested in virtual health communities. Previous research has looked at issues such as knowledge collaboration (Rajabion et al., 2019; Wang, Zhang, Hao, & Chen, 2019; Wu, & Deng, 2019), tools and technology (El Morr, 2019; Sampath et al., 2020), security (Alhogail, 2020; Baeva, 2020; Dang, Guo, Guo, & Vogel, 2020; Forrester, 2019; Trach, & Peleshchyshyn, 2019), information quality of

virtual communities (Rosenlund et al., 2019) and social media (Kubheka, Carter, & Mwaura, 2020; Raja-Yusof et al., 2016; Smith & Yell, 2020).

The majority of virtual community research, according to Guo, Guo, Fang and Vogel (2017), has focused extensively on the patient's perspective, and there is sufficient evidence to support this claim (Han et al., 2019; Hur, Cousins, & Stahl, 2019; Rolls, Hansen, Jackson, & Elliott, 2016; Wentink et al., 2018; Zhang, Guo, Xu, & Li, 2020; Zhou, & Fan, 2019). Furthermore, the number of publications focusing on employees' participation as volunteers in virtual communities has increased (Chen & Wei, 2020; Feng & Leong, 2017; Freidig, 2019; Tan, Jin, & Dennis, 2020, Summet, 2019), but there has been little research on medical doctors (Affinito, Fontanella, Montano, & Brucato, 2020; Kim et al., 2019; Pickell, Gu, & Williams, 2020).

In line with previous studies, a few major gaps have been identified, including (i) few studies focusing on doctors' involvement as online volunteers and (ii) virtual health communities' studies which have been restricted to patients' perspectives, which will be discussed next.

As previously mentioned, there is an increasing field of research being conducted on online volunteer participation (Baruch, May, & Yu, 2016; Cox et al., 2018; Crall et al., 2017; Imlawi & Gregg, 2020; Nguyen, 2019; Seddighi & Salmani, 2019), but there are very few studies that concentrate on doctors volunteering online. Wang, Yan, Zhou, Guo and Heim (2020) argue that it is crucial for IS scholars to understand how doctors actually participate in virtual platforms and offline medical systems. Little is

known, for example, about how the integration of roles has reshaped the way work and family are handled, allowing doctors to volunteer and find a sense of balance. Focusing solely on employee volunteerism in any virtual community can lead to scholars overlooking important factors that can affect the success of virtual health communities that rely on volunteer doctors. Ordinary employees may use very different strategies than doctors when it comes to managing their life domains when participating online. External factors such as individuals around, volunteer organizations and smartphones, according to White (2018), have influenced how individuals establish boundaries in their lives. Seddighi and Salmani (2019) supported White's claim, stating that this is why online volunteering is not suitable for everyone. The points raised centered on a lack of task clarity that can hinder OV roles, especially for employees with demanding jobs and thus suggest that personal characteristics of volunteers be considered. Furthermore, Kramer and Danielson (2017) emphasized the importance of role identification in increasing volunteer recognition and satisfaction. More research is needed to understand the degrees of participation through online and offline networks that can reveal insights into how doctors can balance life as online volunteers and offline doctors, since some online volunteer doctors are able to manage their work and family lives and some are not (Atanasova, Kamin, & Petric, 2017).

Secondly, compared to patients who have used the online platform for a more casual purpose such as seeking information and support, less is known about the dilemma faced by doctors who volunteer online. Although there are some studies focusing on why and how doctors are engaged to the virtual communities (Chen, Lan, Chang, & Chang, 2020; Kim et al., 2019; Shang, Zuo, Ma, & Yu, 2019), there are other areas

that need to be explored in order to fully understand the way doctors manage the border between work and family life, particularly in achieving a balance life. Previous research is mixed in terms of the impact of the ICT connectedness to work and family domain, primarily for online volunteer where the work involves a significant amount of digitally portable work with the use of smartphones, laptops and readily available Wi-Fi.

Even though the flexibility in responding to the work or family has increases (Cadieux, Mosconi, & Youssef, 2019; Nam, 2014), the connectedness of ICT has also widen the blurring boundaries between the two domains (Siegert & Lowstedt, 2019; Von Bergen & Bressler, 2019). The mixed results were relatively caused by the transformation of the nature of tasks being performed using ICT. It is also found that the connectivity to ICT may have extended individuals working hours by allowing work-related matters to be continuously performed even during the family hour or vice-versa, which eventually go beyond office hours and will considered to be “on-call” 24 hours a day (Bodker, 2016; Schlachter, Mcdowall, Cropley, & Inceoglu, 2018; Yang, Zhang, Shen, Liu, & Zhang, 2019). Moreover, the deep penetration of ICT into the lives of individuals has led to a mixed life in a sense that blends work and family, physical and virtual worlds, thus making it more challenging to maintain a border between the different domains of life. Cadieux et al. (2019) also suggested that individuals tend to work at anywhere anytime causing different roles (such as employee, spouse, parents, online volunteer) overlap, high blurring role as well as flexible and permeable boundaries. Moreover, individuals may experience more stress due to the incompatible

expectations and disputes from the blend of both work and family realms and further lead to work-family conflict (Leung & Zhang, 2017; Von Bergen & Bressler, 2019).

Figure 1.1 illustrates the blend of work, family and the ICT when doctors volunteer online in virtual health communities. It shows how the participation in multiple roles overlap, job duties and activities in their lives have become virtually boundary less, and thereby foster work-family conflict.

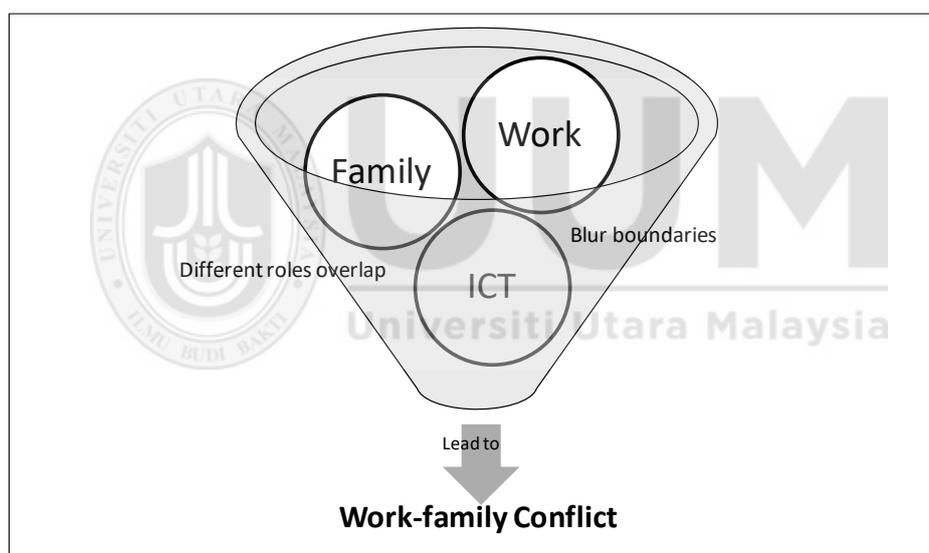


Figure 1.1 The Blend of Work-Family Domains and ICT Lead to Work-Family Conflict

Whether at work, home or while travelling, individuals are expected to be able to complete any given assignment and task no matter during or after working hours. The necessity of fulfilling the responsibilities especially when involving in voluntary activities may end up spilling over the specified work or family period. Hence, the

invasion of work and family lives brought about by ICTs make it hard for OV to balance between work and family life, which may result in negative effects such as job stressor, marriage failure, poor physical and mental health, and life disappointment (Bavafa & Terwiesch, 2019; Leung & Zhang, 2017; Schlachter et al., 2018).

Moreover, past studies have shown that doctors are considered to be one of the most demanding professions where balancing work and family is extremely critical to be attained (Liu, Yu, Ding, Li, & Zhang, 2019; Wroclawski & Heldwein, 2020). For many doctors, this is true because they need to be physically available at their workplace, working around the clock (e.g., normal hours, shift hours, on-call hours), willing to compromise their personal commitments and heavy workload burden. Likewise, the growing permeability between the various life domains induced by the use of ICT for the purpose of volunteering online has increased the workload of employees (Cadieux et al., 2019; Ter Hoeven, van Zoonen, & Fonner, 2016) and accelerated their work speed (Xie, Ma, Zhou, & Tang, 2018). The fact that online voluntary work can be delayed and that the physical atmosphere of the activity is not inhibited raises questions about the possibility of the work spilling into another time (Bavafa & Terwiesch, 2019). They also suggest that by expanding it into selected non-work days, doctors have actually expanded the amount of working hours and exposed them to a lack of work-family balance.

This may explain why many are still unable to achieve the work-family balance even though various practical guidelines and policies have been introduced to encourage the success of promoting the online working alternative, exposing a gap in the

integration of ICT usage from the perspective of online volunteer and how it can affect the work-family interface of individuals. Furthermore, as suggested by Schlachter et al. (2018), there is a need to explore the in-depth embeddedness of ICT use among online volunteer in virtual health communities, which affects sustained volunteering. A deeper understanding of the phenomenon will provide researchers with more opportunities to understand the role of online volunteer doctors and border management, enabling them to maintain a balance between these domains.

1.2.1 Research Questions and Research Objectives

The research questions of this study are:

1. What is the possibilities of online volunteering doctors to balance work and family?
2. How do doctors balance between their work and family while volunteering online in a virtual health community?

The objectives of this study are:

1. To identify the role of online volunteering doctors in balancing work and family
3. To determine the strategies used by online volunteering doctors in attaining work and family balance in a virtual health community

1.3 Scope of the Study

The study is focused on a single case study of one of Malaysia's most active VHCs, DoktorBudak.com, which has over 38 online volunteers who work as pediatric

specialists in both government and private hospitals. The community is registered as a non-governmental organization (NGO) known as *Persatuan Advokasi Kesihatan Kanak-kanak Malaysia*. The group actively promotes the DB VHC by hosting online and offline events such as road tours and media sessions. DoktorBudak (DB) received considerable attention in 2016 when they collaborated with TV9 and produced special slots with Astro Awani in 2017.

The DoktorBudak VHC was selected because it is Malaysia's first VHC dedicated to children's healthcare, and it is run by a group of committed paediatricians. Despite the fact that the VHC only began in July 2013, it is rapidly growing and attracting a large number of online viewers with questions about children's health. The DoktorBudak website had 250,000 page views until October 2014. Their Facebook page had 29,020 followers, and only 2,865 people followed them on Twitter (DoktorBudak, 2020). As a result, their experience juggling online volunteering, jobs, and family life is something worth exploring.

1.4 Significance of the Study

This study is significant for virtual health community research and those who plan to volunteer online. The findings of this study add to the body of knowledge in the field of information systems (IS) by offering researchers and professional's techniques for integrating Web 2.0 technologies into the virtual health environment. Its implementation could help to improve effective virtual communication by providing more participatory environments similar to those created by face-to-face

communications. This study provides insight on different aspects of doctors' engagement in a virtual environment in order to help them make better decisions.

In addition, this study would be of interest to individuals who use the ICT for volunteering online, particularly doctors, as well as healthcare organizations and government in promoting work-family balance. This study is significant as it intersects areas of research in information and communication technology (ICT) and social behavior, particularly on the experience of doctors who volunteer online through VHC in balancing between their work and family while volunteering online.

Online volunteering is the result of the ICT use meant for a community benefits. By leveraging the ICTs efficiently, it is possible for doctors who are struggling to balance their work and family lives to volunteer in online settings. Thus, it is important for researcher to understand the experience of doctors volunteering online in balancing their work and family life because the online channels can regularly be delivered at anytime and anywhere. Although the impact of ICT use on employee work-family balance has been recorded in other countries such as France, the United Kingdom, and China (Bavafa & Terwiesch, 2019; Schlachter et al., 2018; Yang et al., 2019), it is unknown whether the results can be applied to Malaysia due to the unique nature and culture. There has been little research focused on doctors volunteering online who manage to keep a balance in work and family life, especially in Malaysia. Therefore, the findings of this study would increase the knowledge and understanding on work and family interfaces.

This study was important in deciding how doctors who volunteer online balance work and family life, potentially leading to better virtual work environments. When considering online volunteering as an alternative role, improving the existing virtual work policy or promoting an online volunteer role, the findings of this study may be beneficial to top management, leaders, and employees. The results of this study suggest that online volunteering can be used to help individuals communities, and organisations achieve their social missions. This study corroborates Raja-Yusof, Norman, Abdul-Rahman, Nazri and Mohd Yusoff's (2016) findings that volunteering online is a powerful way to engage people in virtual space. Their study identified OV behaviour among members of non-governmental organisations (NGOs), while this study identifies the specific personal characteristics that OV should have when planning to volunteer online, as well as helpful strategies for balancing work and family borders. Conforming to the proposed 12th Malaysian Plan (12MP) agenda in the social re-engineering dimensions, which focuses on improving work-life balance, an appropriate working plan must be established before an online volunteering programme can be implemented that benefits all parties involved.

From a practical standpoint, this study is significant to the healthcare organization and government in collaborating with the virtual health communities. As proven in the literature, the VHCs improved the communication between doctors and patients (Van Der Eijk et al., 2013; Wu, 2018), therefore allowing the healthcare organization opt to combine both type of online and face-to-face communication in order to empower

doctor-to-patient relationship. By adopting the ICT tools, both doctors and patients are not restricted to interact during the hospital official hours. For example, patients or caregivers with little access capacity to visit during typical consultation hours will have more access point to doctors outside of the traditional face-to-face visit. Doctors as well, may practice faster and greater job flexibility in meeting increased patients' demand these days.

This is in line with the 12MP, which was tabled in Parliament in December 2020. As presented by the Director General of Health Malaysia, Datuk Dr. Noor Hisham bin Abdullah in the 12MP kick-off conference, Ministry of Health (MOH) recommends and encourages the use of ICT enabled environment such as online health services to strengthening the health services. The used of ICTs efficiently have vast potential as tools to empower citizens with better knowledge about health care. Emerging areas for instance the social media and virtual health community has unlocked a new channel for curbing physical inaccessibility of health care. Clearly, the healthcare organization should perceive the potential networked collaboration with the virtual health communities (VHC) as a positive transformation towards achieving a better healthcare system.

In addition, the knowledge sharing through VHCs may act as a platform for building a portal for knowledge management, whereby knowledge sharing in healthcare can be systematically planned and organized. The portal allows the healthcare knowledge created by doctors and consumed by members of the communities to be used for a

wide variety of health purposes. Healthcare knowledge management thus improved the quality of patient care and satisfaction with the care they received (Tretiakov, Whiddett, & Hunter, 2017).

Aside from that, the VHCs manager may integrate a more effective communication tool (Morr, 2013) like WhatsApp to improve the level of communication between doctors and patients, since knowledge sharing is a main component of the social process in VHCs. The idea is supported by recent findings on the use of mobile messaging apps in Malaysia, which show that 98.1% of Malaysians use WhatsApp on a regular basis, compared to 73.8% who use Facebook (MCMC, 2018).

1.5 Thesis Organization

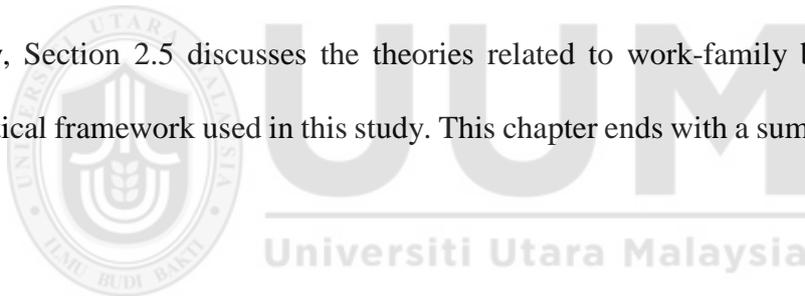
This thesis consists of five chapters including this chapter. This chapter introduces an overview of the thesis by discussing the research background and establishing its aims. Then, the research questions and objectives, the scope of the research, and the significance of the study were presented. Chapter Two provides a review of the theoretical literature that informs this study and discusses the intersecting bodies of empirical research related to the topic under study. The details of the research paradigm, methods, and design of this study are presented in Chapter Three. The results and findings of the study are presented in Chapter Four. Chapter Five concludes the thesis by discussing and interpreting the findings of the study, as well as highlighting the theoretical and practical contributions. The chapter also addresses the limitations of the study followed by some new directions for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the relevant research on online volunteering and work-family issues. The discussion starts with an overview of a virtual community in Section 2.2 by describing its historical background and types. Then, a concept of cyberspace, virtual health community, research on virtual health community, and the virtual health community in Malaysia are elaborated. In Section 2.3, online volunteering is explained and followed by a review of the literature on work-family balance in Section 2.4. Finally, Section 2.5 discusses the theories related to work-family balance and the theoretical framework used in this study. This chapter ends with a summary in Section 2.6.



2.2 The Historical Background of Virtual Community

Virtual communities emerged at the beginning of the 1990's during the rapid widespread of Computer-Mediated Communication (CMC) tools, such as e-mails and other communication applications. Early researched topics related to virtual communities include the definition of virtual communities (Etzioni & Etzioni, 1999; Rothaermel & Sugiyama, 2001), their function as real communities (Anderson, 2000; Etzioni & Etzioni, 1999; Fox & Roberts, 1999; Wellman, 1996; Bakardjieva, 2003), as well as the psychological and sociological perspectives of virtual communities (Ardichvili, Page, & Wentling, 2003; Bakardjieva, 2003).

Since virtual community is one of the most interesting phenomena emerged in the cyberspace as different social “life forms”, more and more researchers are prone to understand how individuals communicate, work and live in a world of global communication network. Here researcher focuses on the concept of the cyberspace, followed by the explanations of the virtual communities and its different category.

2.2.1 Cyberspace

The origins of the cyberspace term is used among professionals and academicians, which refers to a domain that simulates the real one and is built using communication technologies, particularly the Internet. Occasionally cyberspace and the Internet are assumed as identical domains. However, a number of authors think that the term cyberspace embraces more than just the Internet (Clark, 2010; Galik & Tolnaiova, 2019).

Ottis and Lorents (2011) proposed the concept of cyberspace when people interact with information systems and the resulting system can offer other surroundings for communication takes place. The similar views was reported by Yusof, Sukimi, Ismail, and Othman (2011) where cyberspace is a concept comprises of ICT, telecommunications, virtual reality and any technology medium that support people communication. Meanwhile, according to Clark (2010) cyberspace composed of four levels: human level, information level, logical level and physical level. The people are the highest level and the most critical component of cyberspace as they delineate and shape its character by contributing to the content that it offers. Clark (2010) views

the cyberspace as a medium that help people to communicate. The information created, transferred, and changed in cyberspace is based on demand (such as website), personalised to each user, grounded on component information which kept in databases. The central of the cyberspace lies in its logical layer where the Internet platform is defined and produced. The Internet offers a set of abilities that is separated from the details of the technology that supports it. For instance, the fundamentals aspects of the Internet susceptibilities such as phishing or denials of service attacks are explained in this layer. Meanwhile, the physical layer of cyberspace that composed of physical devices such as computers, servers, sensors, the Internet, and communication channels is the foundation that support the logical elements.

Ploug (2009) describes cyberspace as “a virtual place, room or space sustained and accessed through networks of interconnected computers in which agents are interacting” (2009: 69-70). However, one should bear in mind that cyberspace is more than a virtual domain though it relies on Internet to a great extent. The domain of physical and virtual worlds is strictly connected. The social relations, structures and qualities of people do not vanish in the virtual world (Hamelink, 2000). Researcher again agree with Semercioglu (2017) who stressed that cyberspace is distinct from the virtual domain as it has little connection to the reality which is fabricated, unreal or imaginary. The cyberspace can be viewed as a domain which is principally generated by the expansion and application of ICTs which function as a third domain where one can ties social domains from work or home.

Moreover, previous works on the online and offline communications suggested that as individuals participating online, the cyber domain had change the space and temporal relations as well as the landscape of the traditional borders (Bodker, 2016). For example, individuals who tend to use or moderate a virtual community are in fact situated in physical environment and possibly using a smartphone to talk to somebody nearby him/her. Therefore, both the facet of online and offline settings are combined to create the domain in which the public communications take place (Page et al., 2016). Further, the researcher assume that the interrelated structures inside cyberspace remain borderless.

There is also evidence suggested that the virtual border is formed when physical borders and cyberspace borders overlap. This virtual border will produce the unclear border spaces as well as unclear communication situations which may further generate conflict that may embrace those in life external to the cyberspace (Jimenez, Orenes, & Puente, 2010). For example, Schaubroeck and Yu (2017) disputes that virtual team members face with conflicts in communication due to issues such as uncertainty over roles and duties and lack of communication sign. Yarbrough (2016) highlight the conflict posed by virtual team especially those who work across diverse culture, space and time may cause them to experience interpersonal conflict between colleagues, family members and friends.

2.2.2 Virtual Community Definition

A virtual community is a social unit that relate to each other through the usage of particular technology. Traditionally, geographic areas (e.g., village) or organizational unit (e.g., universities) fuels community's growth (Rheingold, 1993). The "virtual" concept suggests that only part of the traditional characteristics of a community is virtual and do not belong to the 'real' world (Stolterman, Croon, & Argren, 2000). This is because virtual communities are real parts of society and depends on the growth of society and hence will affect the way society is organized and transformed. Next, researcher review some of the definitions offered for the virtual communities that emerged in cyberspace.

Virtual community (VC) can be defined based on the perspective from which it is demarcated. Preece (2001) defines VC as a community made up of people, shared similar purpose, definite policies, and using computer systems as a means. Howard Rheingold (1993) explained VC as "...social aggregations that emerge from the [Internet] when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (p. 5). Rheingold suggested that people in virtual communities perform activities that they do in real life, and do not face each other to exchange ideas. He introduced a "netnographic" approach that study on social interaction in online contexts. Thus, individuals in a virtual community formed a social entity and they are bind to each other by the use of particular technology.

A virtual community is views by Lawrence (1995, as cited in Rothaermel & Sugiyama, 2001) as a social network that allows its members to communicate and are bound by specific standards and rules. Shafique, Ahmad, Kiani and Ibrar (2015) suggested that virtual community participants communicate through discussion forums on a certain topic of interest. In general, virtual communities is a cyberspace using computer-mediated upon interaction of memberships to create member-driven subjects (Lee, Vogel, & Limayem, 2003). The cyberspace may consists of blogs, social networking groups (e.g., Facebook, Twitter, YouTube, and LinkedIn), forums, message boards, and chat rooms. Whittaker, Isaacs and O'Day (1997, p. 28) identified the main attributes of a VC includes a shared goal, interest, need, or activity. The community participants normally has strong interactions, emotional bonds and shared activities among the participants.

A consensus in the literature regarding the definition of virtual communities suggests that a virtual community is a group of people with similar passions and practices, and communicate over the Internet without time and space restriction (Armstrong & Hagel, 2000; Gang & Ravichandran, 2015; Li, 2004; Levine & Prietula, 2013). It is clear that this community is not solely about gaining the benefits from the information exchange process and the tools provided; but more than that, the members may learn from and about each other, thus meeting their social needs. Other terms used to refer to a virtual community are online community, online forum, network community, web community, and online group, among others (Leonards, 2011; Preece, 2001). Throughout this study, the term virtual community use refers to a group of peoples who communicate via the Internet platform, members may meet only online but

sometimes face-to-face, and form a relationship by sharing knowledge and experience, as well as gain mutual trust and respect for each other. This explanation is chosen because of its ability to represent the four main components i.e. community, location, bonding, and shared goal (Gupta & Kim, 2004).

2.2.3 Types of Virtual Community

There is no specific accepted type of virtual communities (VCs). Most early researcher (Hagel, 1999) categorized VCs according to the community's core principles; which is based on the consumer needs such as transaction, interest, fantasy, and relationship. A community of transaction focuses on the buying and selling of products or services online, thus delivering the information pertaining to the transaction. A community of interest involves a group of people who interact with one another on specific subject such as interior design. A community where people create and explore imaginary worlds of fantasy is a community of fantasy while a community of relationship is forms among people with certain life experiences (such as diseases) which lead to a deep personal bonding. Maturity of a VC depends on the fundamentals of all types of VCs that need to be presented, so that all consumer needs can be achieved (Hagel, 1999).

In contrast, Bressler and Grantham (2000) grouped VCs based on the motivation such as purpose, practice, circumstances, and interest. VC based on purpose explains the aims that its members try to achieve while VC of practice unite members with similar profession or situation. The next motivation that leads people to form communities is the circumstances, where its members are steered by circumstance or experiences. The

communities of interests are motivated due to common interest or passion. While Bressler and Grantham's classification is observed from a business perspective, Hagel's viewpoint is more from a sociological perspective.

Buhrmann (2010) suggested VC based on the information of its members, purposes, customer communities and communities of practice. The VCs that is grouped according to information such as age-related, gender-related is VC of members. The community of purpose reflects the four consumer needs as discussed by Hagel. The customer community refers to companies that host a community on their websites with the aim to build relationship with customers and eventually create profits. Last, the community of practice (CoP) introduced by Lave and Wenger (1991) gathered a group of like-minded individuals who share and seek knowledge (such as experience, stories) related to their profession.

Wenger and Snyder (2000) termed the CoP as a group "of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). The CoP has an informal structure for the members to improve and distribute knowledge. This virtual community is valued because the members can improve sense of belonging, sharing experiences with others and expand their professional identity (Warren, 2009). Since the communities are developed and maintained online, they are refers to a Virtual Community of Practice (VCoP). Pan et al. (2015) provided evidence that knowledge exchange and social capitals in VCoP can be enhanced by social networking support. Table 2.1 shows a summary of the classification types of virtual communities.

Table 2.1

Classification Types of Virtual Community

Authors	Classification by	Types of Virtual Community
Hagel (1999)	Basic needs of human	<ul style="list-style-type: none"> • Interest • Relationship • Fantasy • Transaction
Bressler (2000)	Motivation	<ul style="list-style-type: none"> • Communities of purpose • Communities of practice • Communities of circumstances • Communities of interest • Based on the particulars of its members
Buhrmann (2010)	Not mentioned	<ul style="list-style-type: none"> • Based on purpose • Customer communities • Communities of practice (CoP)

2.2.4 Virtual Health Communities

According to Demiris (2005) and Peng, Sun, Zhao and Xu (2015), virtual health communities (VHCs) provides an avenue for individuals to meet up and communicate over digital technologies in order to gain health information, self-guided, and social service. VHCs allows its stakeholders and members to share knowledge and experience or provide support virtually. Interaction between doctors and patients beyond face-to-face meetings refers to P2D (patients-to-doctors) VHCs. Through this platform, doctors form a virtual group by offering support to participants (i.e., patients or caregivers) on specific health information while participants may share their experiences and seek information in improving patient care. Peng et al. (2015) revealed that P2D VHCs may strengthen the communication between a doctor and a patient and to a certain extent, diminish health issues disagreement. The CHES (Comprehensive Health Enhancement Support System) project, which supports

patients with chronic diseases such as cancer, HIV and heart diseases, is an example of P2D VHCs (Gustafson et al., 1999).

Patient-to-patient (P2P) VHCs consist of patients and their family members that act as self-help groups of individuals with similar diseases. These VHCs are suitable for patients to gather information and find peer patients (Peng et al., 2015). A number of authors (Kim et al., 2012; Wang et al., 2015) have recognized that participation in VHCs can assist patients seek psychosocial (e.g., coping, depression) and emotional supports. Such support helps the patients and their family members fight against the diseases, which is a form of therapy for patients.

The General Public Centered VHCs provide the members especially patients, on wide-ranging information thus enabling them to self-manage their healthcare (Morr, 2013). These type of VHCs are open to anyone to discuss health information via forums or educational services provided. Some of the VHCs targets specific diseases, while some focus on special social groups, such as women. Finally, a VHCs that is managed by a team of health professionals in creating, defining, and exchanging new knowledge refers to the Professional Centered VHCs. These type of VHCs which sometimes known as the virtual community of practice (VCoP) are used for research purposes and distributing knowledge. VCoPs mainly support health professionals in the same domain of interest to collaborate online by sharing knowledge, improving performance and support the development of innovation and best practices in medical (Ikioda et al., 2013). Since VHCs has received a considerable attention and it moves very fast to capture the attention of doctors, patients and caregivers, this study

researched a P2D VHCs of DoktorBudak.com, which provides a case of the doctor-to-patient community, and specifically, doctor to caregiver-centric support groups.

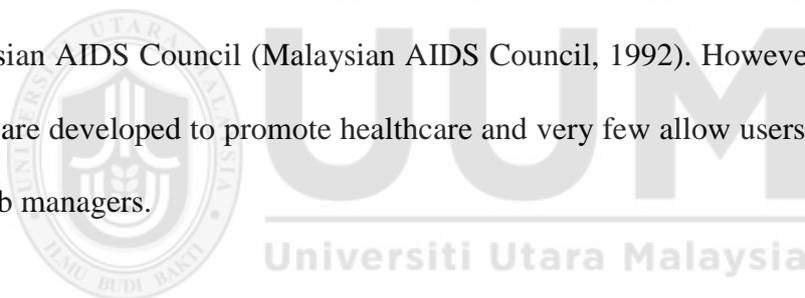
2.2.5 Virtual Health Communities in Malaysia

Healthcare delivery in Malaysia is moving towards the betterment. Many hospitals have been using telehealth applications to keep up with the changing technologies. In 2005, under the Malaysia Super Corridor (MSC), which is the telehealth flagship project, an online health portal, MyHealth, was set up to promote individuals to take care of their health. The portal is managed by a team of experts in healthcare industries where the appointed health professionals handle the questions asked in the websites. The portal is not specialized in specific diseases; but it covers everything related to healthcare from diseases, health information, current issues, and also online services for people to ask the health professionals directly.

One of the appealing features of MyHealth portal is the ‘Ask the Expert’ section where members can ask a question to the appointed doctors and get answers pertaining to health-related matters. However, a major problem with this application is in terms of the response time for the user to get an answer, which generally takes about three working days (Som, Norali, & Ali, 2010). In addition, recent statistics generated by the portal showed that the number of the users is considered too small even though the portal has been established for almost 10 years. For record, in 2016, only 53 online transactions took place in the section (Kementerian Kesihatan Malaysia, 2016). Thus, an improvement should be done to make the application truly ‘virtual’ with

asynchronous communication so that the application can be user-friendly, provide a competent healthcare delivery, and enhance the quality of life.

Currently, there are also other non-governmental organizations (NGOs) that create Virtual health communities to share, educate, and enhance the awareness of the importance of health among the society, such as the community on healthy lifestyles (HealthWorks, 2015), the breast cancer community (Breast Cancer Welfare, 2011), and the mental health problems community (Malaysian Mental Health, 2008), among others. There are also health communities built from social media (e.g., Facebook), such as the Malaysian cancer support group (Cancer Support Group, 2011) and the Malaysian AIDS Council (Malaysian AIDS Council, 1992). However, most of these VHCs are developed to promote healthcare and very few allow users to interact with the web managers.



2.3 Online Volunteering

Technological and social networking has formed a new ways of volunteerism known as online volunteering. In this context, the volunteers are real but the service provided is done electronically to generate a greater audience. Online volunteers offer their expertise virtually, without time or monetary deliberations but for the sake of the public.

Volunteering online has significantly improves the flexibility of volunteer participation as it removed the fixed times and places. In addition, the online volunteering jobs performed can bring a real life effect (Ellis & Cravens, 2000). NGOs

that depend on funding from outside, for example, can profit from online volunteering (Grimm, Dietz, & Foster-Bey, 2006). Among the activities engaged by most online volunteer include charity tasks, technological base, communications, advertising, expert consultant and research writing.

The online volunteering activities comprised of three main entities: the volunteers, the organizations and the societies. These entities interact among them and play important roles to make a volunteering activities succeed. During the early time when the OV was introduced, the instruments used were e-mails, but later, other means like the social networks, group discussion, instant messaging and even telephone conversations are helpful to better coordinate online volunteers.

2.3.1 History of Online Volunteering

The history of online volunteering (OV) begins parallel with the development of the Internet, which was more than forty years ago. The first organized online volunteering project that began in 1971 was the Project Gutenberg, an effort by a non-profit organization that utilized online volunteers to produce digital content versions of their publication works. While the development of OV started in 1970s, it gained considerable attention in 1999 with the more widespread public use of the Internet. As there were drastic changes in the government delivery, such as the call for partnership, devolution of power in the country, program and funding cutbacks, service-based organizations were competing for their survival, resulting in an increase in the demand for volunteers (Hosli, 2000). Moreover, volunteers have changed their interest for more precise, time-frame volunteer jobs that allow them to utilize their own skills and

acquire new ones. As a result, the concept of OV has become attractive, especially people with disabilities, older volunteers, those who live in remote areas, or those with family commitments (Craven, 2000).

In 1996, the Virtual Volunteering Project initiation provides significant information that facilitate volunteers to engage in productive, worthwhile, assignment-based online work. Throughout the earliest year of the Virtual Volunteering Project, less than 200 organizations, mainly in California, utilized online volunteers. Since then, there were too many organizations involved online volunteers, causing the number of online volunteers or the number of organizations related to them are hardly known due to no proper body to monitor them. Therefore, in March 2000, the Online Volunteering service, a joint initiative by Cisco Systems and United Nations Development Program (UNDP) was launched. The United Nation Volunteer (UNV) programs has involved thousands of online volunteer to help communities in the developing world. Around February 2004, the UNV hosted its own URL, www.onlinevolunteer.org. Particularly, the tasks carried out by online volunteers are data entry and database management, project management, language translation, providing support, designing graphics, office and communication tasks, online discussion facilitation or moderation, making of articles, online coaching, expert assistance, program development, and publication design (Cravens, 2006).

The term and concept of ‘virtual volunteering’ were first used by Steve Glikbarg, one of Impact Online’s co-founders, which is known today as VolunteerMatch. VolunteerMatch is the web’s largest volunteer recruitment organization which assists

corporate, educational and non-profit organizations to manage successful community engagement programs. The organization has been very successful in achieving their goal. In 2013, VolunteerMatch has created 915 million dollars in social value through 90,000 volunteer's participation (Giva, 2014). They also have been cited by three United States Presidents as a valuable resource for civic engagement. During the early time when the OV was introduced, the instruments used were e-mails, but later, other means like the social networks, group discussion, instant messaging and even telephone conversations are helpful to better coordinate online volunteers.

2.3.2 Online Volunteering Definition

Since no agreement have been reached on the meaning of online volunteering (Conroy & Williams, 2014; Pena-Lopez, 2007), varying terms has been offered. These include 'virtual volunteering', 'digital volunteering', 'micro volunteering', 'cyber service', 'crowdsourcing', 'telementoring', 'teletutoring', and 'online mentoring'. All the terms created refers to similar concept and ideas applies to any work performed offsite, using the medium of online spaces, formal or informal forms of involvement, the assignments needed may come in a short or long-term goals and no financial rewards is expected. However, when referring to online volunteers, not all terms suggested are appropriate to be used since the setting may be different.

Ellis and Cravens (2000) use the term 'online volunteering', denoting it to "any volunteer tasks that are completed off-site from the organization, in whole or in part, through the Internet at home, work or public access through a mission-based

organization (non-profit, civil society etc.)”. Clearly, not all OV tasks can be completed online, somehow certain part of the tasks can be implemented in a combination of online and offline. Individuals, company, public or any mission-based organization could propose the voluntary projects. Again, Ellis and Cravens proposed to use the phrase ‘online volunteer’ rather than ‘virtual volunteer’ when describing to any individual who volunteer online, because the term ‘virtual’ denotes the existence of the individual who volunteers are not for real.

Likewise, the United Nations Volunteers (UNV) is using the term ‘online volunteer’ formally throughout the organization. They mentioned few important characteristics dimensions for volunteering regardless when one demands to volunteer onsite or online. The first characteristic highlights on the free willingness of the volunteers, then individuals volunteer not on monetary inducement and volunteer work performed is for the benefits of the community (Chao, 2006). Pena-Lopez (2007) opposed the use of the term ‘teletutoring’ and ‘telementoring’ to refer to online volunteering. She argued that both terms reflect volunteering as a profit-oriented job, whereby ‘teletutoring’ refers to teaching via a virtual learning setting while ‘telementoring’ offers a more personal online coaching. Alternatively, she prefers to apply the term of online volunteers, virtual volunteers or e-volunteers.

While a range of definitions of the term online volunteering have been offered, this study use the term and definition suggested by Ellis and Cravens (2000), who viewed online volunteering as carrying out volunteering tasks or activities via the Internet. The activities include providing guidance, advice, solutions, support or interacting

directly with patient's parents or their family members. Throughout this study, the term online volunteering is used. Online volunteers in this study comprise teams of doctors who are scattered all over Malaysia, who do their voluntary activities from home or work place or other offsite location, and who may otherwise communicate virtually or meet physically and contribute their services through the Internet as the medium.

2.3.3 Research on Online Volunteering

Online volunteers and online volunteering has been studied in a wide variety of disciplines, ranging from sociology, human behavior, psychology to information technology, management, and computer-mediated communication. Few studies related to online volunteering have solely focused on the motivation (Baruch et al., 2016; Cox et al., 2015), potential (Amichai-Hamburger, 2008; Cravens, 2006; Danaiata et al., 2013; Pestereva et al., 2014), implications (Conroy & Williams, 2014; Jiranek et al., 2014; Wilson, 2000), user participation (Chen, Ren, & Riedl, 2010; Mukherjee, 2010), online volunteerism impact (Powell, 2010) and social media usage in online volunteering (Conroy & Williams, 2014; Klotz, 2012; Raja-Yusof, Norman, Abdul-Rahman, Nazri, & Mohd-Yusoff, 2016). Recent research showed the importance of online volunteering for social capital developments and growth of the digital economy (Cox et al., 2018; Seddighi & Salmani, 2019), but less research focused on the online volunteering, via virtual health communities, particularly related to doctor as moderators and the way doctors balance their life as volunteering online.

Voluntary works among the labor force in United States and several European countries are considerably high (Ramos, 2015). Ramos postulated that since majority of the volunteers are still in the workforce, volunteering activities promote a better work-family balance. Thus, studying the experience of the working individuals who volunteer and juggle the different life domains is warranted. In fact, there are number of reasons for doctors to engage in online volunteering particularly in Malaysia.

Several authors identified reasons why individuals volunteer online. These include aspects such as not able to reach the onsite modes owing to disability, problems on family responsibility and preferences to work from home. These perfectly motives appear to benefits any online volunteers to be, however, the time spent online entails real time, that is just as much as onsite volunteer needed, because online volunteer need to perform online tasks such as updating information (Ellis & Cravens, 2000). Their view is in line with Ramos, Brauchli, Bauer, Wehner and Hammigs (2015), who pointed out that volunteering denotes a different set of life sphere, which is not simply confined to work or individual's free time. Still, a strong community engagement is demanded, that separates it from other form of leisure activities.

In the context of this study, taking the controlling and enabling features of volunteering online, researcher define volunteering online as a work-related demand in agreement with Demerouti et al.'s (2001) explanation of work-related demands as "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs" (p. 501). Volunteering online takes place during nonworking

time and hence extends the thoughts about the work and therefore, lessens time for non-work-related events which are beneficial to recuperate from work. Although the online volunteering tasks is deliberated as optional and voluntary, it however pulls on an employee's inner resources (Jochum & Paylor, 2013) as it involves time, consideration and determination. Delineating volunteering online as a demand further entails that it is expected to be related with harmful effects for the employee, especially concerning their well-being (Demerouti et al., 2001).

The effect of volunteer works may come in different forms, both from positive and negative outcomes. A large amount of work has been reported on the benefits of online volunteering. The studies observed the benefits from the point of views of the employees, organizations, and communities. Several advantages identified are to increase job performance (Loosemore & Bridgeman, 2017), promotion of leadership, increase family interaction (Liu et al., 2016) and lower depression level (Infurna, Okun, & Grimm, 2016). Steimel (2018) remarked that individuals who engaged in volunteering has the capability to improve their job skills. For example, one might obtain additional skills that are impossible in the present job. Jiranek et al. (2014) affirmed that online volunteers could accomplish the constructive effect of onsite volunteering too. For example, individuals may acquire social acknowledgment, improved well-being, confidence, and career advancements. Furthermore, individuals may confront a lower level of despair, life contentment, and wellbeing (Ramos, 2015). As stated by Cox et al. (2018), volunteering online can enhance pro-social behavior among volunteers and thus, promotes helping behavior. The pro-social behavior refers

to “voluntary actions that are intended to help or benefit other peoples or group of peoples” (Eisenberg & Mussen, 1989, in Amichai-Hamburger, 2008, p. 3).

In addition, flexible work styles have become a norm among online volunteers (Universiti Sains Malaysia, 2014), hence encourage a healthy work-life balance. Online volunteers are likely to use the Internet regardless of their situation, promote volunteering tasks to occur at any time, which give them a chance to organize and find the right time to balance their between work and family life. Furthermore, research has indicated that most of online volunteer support local organizations and volunteer onsite along with volunteering online (Cravens, 2000).

Some organizations believed that online volunteering can resolve their staffing issues and support a flexible employees (Kittur et al., 2013), thus minimizing shortages of professionals and experts. Many managers described that online volunteers facilitate them to perform jobs that are incapable to provide previously. In such situation, the volunteers needed are those with specific skills such as in information technology (IT). Moreover, online volunteering also unfold the possibility for small and startup organizations to hire volunteers online, mainly skilled employees that are unreachable (Zhu, Song, Ni, Ren, & Li, 2016). Accordingly, organizations can design their activities to reduce costs, capitalize on resources, and increase efficiency.

One of the downsides of volunteering in general and online volunteering, in particular, is the failure of online volunteers to organize their time at home or at work successfully. As highlighted by Schlachter et al. (2018), since performing online

volunteering jobs may remove individuals from the conventional space and time, the jobs may obscure the boundaries between both work and family domains and become problems with regards to establish workplace practice. Therefore, online volunteer will need to safely adjust the time spent both at the workplace and at home in order to secure their boundaries.

An investigation on the use of ParkinsonNet, a dedicated VHC for Parkinson illness, observed that doctors feel uncertain to provide patient care via the Internet platform (Van Der Eijk et al., 2013). These technologies appear to interrupt doctor's traditional practice pattern, which clearly demanded their extra times. Similar findings by Antheunis et al. (2013) reported factors that impedes doctors from using social media as a tool to communicate with patients are due to the burden of time.

Not all organizations have optimistic views towards the idea of having online volunteer in the company. As reported by Kittur et al. (2013), online volunteers may substitute the existing workforces with inexperienced online volunteers as the jobs will be separated into minor tasks. In fact, easy or difficult jobs, as for example, interpretation, speech dictation, and product design can be done by OV with an appropriate method and computer support. Besides, Murray and Harrison (2002) claimed that managers of online volunteers are experiencing similar problems with onsite managers regarding reliability and standard of work created by the volunteers. The same view is shared by Conroy and Williams (2014), where she suggested that organizations must give reasonable period of time for online volunteers to familiarize with the jobs agreed, the organizations or communities they serve. There are certain

barriers faces by employees volunteering online, such as suggested by Danaiata et al. (2013) where companies should take preventive measures to reduce the problems faced by online volunteers. Managers for example, can suggest flexible working hours to OV, create a culture that values all volunteer's efforts, find the proper roles for volunteer, and facilitates the group development.

Although there exists a considerable body of literature on the participation of doctors in onsite volunteering (Kolkin, 2018; Kim et al., 2019; Gau, Usher, Stewart, & Buettner, 2013; Kamaludin, Muhammad, Abdul Wahat, & Ibrahim, 2013), less attention has been paid to issues on online volunteering, particularly in Malaysia. The existing academic literature tended to focus on volunteering aspects related to motivations, challenges, problems to onsite volunteers rather than online volunteers, especially among doctors.

2.3.4 Volunteering Online among Doctors

Studies on the reasons individual choose to participate in voluntary work have been addressed most extensively by psychologist and sociologist. From psychology viewpoint, Clary et al. (1998) recognizes that an individual volunteers in order to satisfy some needs or desires. The volunteer functions inventory (VFI) scale developed by Clary et al. (1998) classify six personal and social functions as the motives that influence individual to engage in volunteerism. The motives include values (altruistic and caring for others), understanding (gaining of knowledge and skills), enhancement (individual development, self-respect and psychological development), social (build up rapport with others), protective (lower bad feelings and

problem solving) and career (professional experience). The different motives indicate that individuals are doing similar activity (e.g., sharing advice and knowledge to patients for free) but with different psychological functions. Meanwhile, sociologist highlighted that individuals decide to engage as volunteers when they have the resources in place and influenced by structural factors such as social, economic, policy, and organizational environments (Wilson, 2000). Besides, it is argued that individual who is expected to volunteers are those from high level socio-economic categories.

Doctors for example, engaged in volunteerism for society's expectation and some are driven by own personal values. Regardless of the reasons doctor has for volunteering, the action of volunteering offers benefits both on their personal and professional lives. A study from United States explain that doctors' engagement in volunteering comprised of obligation to humanistic and moral principles, personal experiences, professional skills and career interests (Mishori et al., 2016). Similar works of Elseed (2012) stressed that doctor volunteer to accomplish their career purposes; nevertheless, this reason is also correlated with other reasons such as for values and understanding. Therefore, doctors who volunteer in traditional healthcare setting cannot be delineate as individualistic, somehow doctors have their own reasons for doing it. Survey by Ranschaert et al. (2016) reported that European radiologist is motivated to engage in social media to share information while Antheunis et al. (2013) claimed that doctors use social platform for professional networking and marketing. Doctors also join a practice-based Virtual Community of Practice (VCoP) to enhance

their professional networks, access valuable knowledge, improve clinical practice and indirectly improves patient outcomes (Rolls, Hansen, Jackson, & Elliott, 2016).

However, it is not clear whether the reasons doctors volunteer in face-to-face healthcare environment is similar with those who volunteer online, and there is limited proof that suggests online volunteer is driven by similar reasons to traditional volunteer. Much of the empirical research on individual's engagement in virtual community is related to individual motive and characteristics. These motives explains why individuals contribute to the common good (i.e., voluntarily share medical expertise knowledge). However, while ample research has focused on understanding factors that influence doctors volunteering in online platform or traditional environments, research on how doctors volunteering online maintain a healthy work-family balance remains lacking.

In this study, prior to identifying the role of online volunteering doctors embraced in attaining work and family balance, researcher dig into identifying the most common reasons for doctors to volunteer online in DoktorBudak VHC. Thus, exploring the reason individual volunteer online may influence the perception of work-family boundaries management and in turn be associated to other essential consequences, which could possibly be a positive or negative one.

2.3.5 Online Volunteering in Malaysia

Online volunteering in Malaysia is increasing, even though it does not contributes much to the voluntary area. Based on the World Giving Index (WGI) review, Malaysia

were ranked in the top 22 in 2016 of the 140 countries in the world with the charitable behavior such as volunteering, as compared to 71st position in 2013 (Charities Aid Foundation, 2016). Recently, the Malaysian government had announced comprehensive efforts through the Shared Prosperity Vision 2030 (SPV) that would serve as the Twelfth Malaysia Plan (2021-2025) and the Thirteenth Malaysia Plan (2026-2030) blueprints (Ministry of Economic Affairs, 2019). The idea of the Shared Prosperity Vision aims to reinforce issues on income inequalities and towards becoming a unified, wealthy and harmonious country. One of the strategic thrust in the SPV, the social capital, will intensify the citizen participation through vary activities such as volunteering that may build up the people's trust in society. In this respect, volunteerism can be a great assistance by delivering the appropriate tools to run the society in better way. Further research is needed to understand the volunteer behavior among Malaysians especially professionals who are engaged in online volunteering, because the volunteering can be done virtually these days.

In effort to spearhead volunteering activities among Malaysians, the government have funded a 100 million ringgit, managed by the 1M4U (MalaysiansOutlook, 2013). Among the target of this project is to increased number of professionals such as medical doctors in volunteer programs. In order to achieve the status of developed country, the initiative of online volunteering to become way of life is in line with the country's hope. DoktorBudak.com virtual health community can be the model of a platform for doctors volunteering online. This community was initiated by two pediatricians, namely, Dr. Zahilah Filzah Zulkifli of Hospital Sungai Buloh and Dr.

Foo Chee Hoe of Hospital Sungai Long, Kajang in July 2013. The team comprised of pediatricians from the government and private hospitals in Malaysia.

Given the fact that the goal of online volunteering is to eliminate geographic barriers, allowing for a more diverse volunteer workforce and a broader range of expertise, some online volunteers may also volunteer in person for the organization (Ellis & Cravens, 2000), as the DoktorBudak team did. To raise public awareness on issues related to children's health, DB partnered with a few Malaysian TV channels (e.g., TV9, Astro Awani) and radio stations (e.g., IKIM FM). Collaboration between DB and other NGOs and multinational corporations has also been extended to include sharing expert advice on children's healthcare.

DoktorBudak online volunteers may offers potential solution to some problems in Malaysia's health system, such as a lack of health promotion workforce, a supportive environment, and the community's unwillingness to take responsibility of health issues (Ministry of Health Malaysia, 2011). The initiative is in response to the United Nations Development Program's (UNDP) call for the development of online volunteering programmes (United Nations Development Programme, 2013). Malaysia is one of the UN members who has showed an interest in the UN Online Volunteers programmes, which enable online volunteers to participate in a variety of projects around the world by partnering with non-governmental organizations, civil societies, governments, public institutions, UN agencies, and other intergovernmental organizations. Since its inception in the year 2000, the programme has benefited from nearly 11,037 online volunteers from 182 developing countries, including Malaysia. More than 94% of

online volunteers and organizations who participated in the programme viewed their partnership as good or excellent (UN Online Volunteering, 2015).

Although some non-profit organizations have run volunteer projects, little research has been done on online volunteering, particularly in Malaysia. This may be due to the fact that such organizations operate in physically remote, psychologically uncertain, and faceless environments (Universiti Sains Malaysia, 2014). The combination of projects, whether onsite or online, can be found in a variety of areas, including healthcare (DoktorBudak, 2020), the environment (Global Environment Center, 2015), leadership development (Do Good Volunteer, 2015), and humanitarian relief (Islamic Relief Malaysia, 2015; UN Online Volunteering, 2015).

Doctors in Malaysia usually volunteer onsite to provide medical services in international situations because they want to help those in need, get away from their daily routine, or expand their own experiences. Doctors, on the other hand, should carefully consider not only the potential benefits of volunteering, but also the potential professional and personal challenges. According to previous research, doctors, especially junior doctors, experienced a variety of work-related stressors that hampered their ability to engage in other domains such as family or volunteer work (Adisa, Mordi, & Mordi, 2014; Deng, Yang, Li, Wang, Yan, & Li, 2018; Guille et al., 2017). In this sense, doctors who juggle multiple tasks, like online volunteering, can find it more difficult to manage all aspects of their lives, preventing them from volunteering on time. When they fail to manage their time and surroundings effectively, the volunteer work will eventually become a burden.

2.4 Balancing Work and Family

This section discusses related research on work-family balance among online volunteers in a virtual health community, which focuses on online volunteers of doctors. This section is organized into several sub-sections which include the definition of work-family balance, research on managing work and home tasks from the border management perspective, theories on work and family interaction and analysis of theoretical review.

2.4.1 Work-Family Balance Definition

Past researchers have proposed varying definitions on the concept of ‘work-family balance’; hence, explicit definitions are hard to be found in the academic literature (Frone, 2003). Clarke, Koch and Hill (2009) refer work-family balance as having an equal sense of happiness in various life aspects. Kirchmeyer (2000) outlined a balance life as “achieving satisfying experiences in all life domains; and to do so requires personal resources such as energy, time, and commitment to be well distributed across domains” (p. 80). Balance works in two ways, namely, the positive and negative balance, depending on the level of attention, time, and commitment, and whether they are high or low. Greenhaus, Collins and Shaw (2003) extended Kirchmeyer’s definition by considering the levels of time, involvement, or satisfaction. Hence, Greenhaus, Collins, and Shaw defined work-family balance as “the extent to which individual are equally engaged in and equally satisfied with the work and family roles” (p. 513).

Voydanoff (2005) suggested that work-family balance is achievable when individuals can effectively utilize both demand and resources in any domains because it may influence the quality of different life domains. Voydanoff explains resources as a structural or emotional asset that can be used to simplify individual performance and minimizes demands from any domains. On the other hand, the desire of individuals for any specific role obligation and norms regardless in the form structural or emotional denotes demands. These two references have led to two different viewpoints of work-family connections, which is the occurrence of work-family conflict (WFC) or facilitation (WFF).

The basic principles of Voydanoff's (2005) and Frone's (2003) definitions are essentially the same. Both definitions provide a four-fold taxonomy of work-family balance, which are work-to-family conflict, family-to-work conflict, work-to-family facilitation, and family-to-work facilitation. Frone further stated that work-family balance is represented when there are low levels of inter-role conflict and high levels of inter-role facilitation.

Grzywacz and Carlson (2007) claimed that work-family balance should be viewed as an “accomplishment of role-related expectations that are negotiated and shared between an individual and his or her role-related partners in the work and family domains” (p. 458). They asserted that individuals are supposed to socially negotiate and share responsibilities in both work and family domains through regular communications with other partners in the domain. Here, these authors observed work-family balance from a social construct, not from psychological one.

All in all, the work-family balance (WFB) may bring impact whether positively or negatively to the other domains in life. Nevertheless, since WFB is a multifaceted occurrence, no agreement has been made with regard to the actual meaning it may bring. In this study, researcher use the term WFB to refer to the level that individuals may function effectively in handling different unique demands in work, family as well as voluntary work domains. Individuals may reached a certain level of satisfaction that allow them to attain sense of balance in all domains; work, family and online volunteering.

2.4.2 Research Related to Work-Family Balance among Online Volunteers

Over the last few decades, study on the arrangement of work and family has grown in response to evolving family structures (e.g., increase number in the dual-earner spouses) and changing nature of work (e.g., the common of non-standard work schedules). Other than the paid jobs, unpaid volunteers work also offer a range of important services that may provide the betterment for society (Butcher & Einolf, 2017). In many countries, including Malaysia, volunteers provide community health care for those living outside of major city centers, during huge disasters or prolonged health crises. For example, during a clinical trial for the COVID-19 vaccine, the Ministry of Health requested approximately 3000 volunteers to engage in a vaccination programme (“Application to volunteer”, 2021).

Researchers believe that the individuals' personal lives as volunteer are subjected to several challenges. In studies by Kim et al. (2019) and Mcgeehan, Takehara and Daroszewski (2017), volunteers reported that time commitment was the major

obstacle that interfered with their personal and work time. Employees who volunteer in healthcare and emergency response sector, in particular, are more likely to experience work-related burnout as a result of exhaustion and a demanding work environment (Chirico et al., 2021; Huynh, Winefield, Xanthopoulou, & Metzger, 2012). These problems might have a detrimental impact on living a balanced life (Cowlshaw, Birch, McLennan, & Hayes, 2014).

On the contrary, multiple studies of volunteers in the workforce (Kelliher, Richardson, & Boiarintseva, 2019; Longenecker, Beard, & Scazzero, 2013; Ramos et al., 2015; Sirgy & Lee, 2018) have shown that volunteering may assist individuals find a better work-family balance (WFB). Moreover, WFB has been identified to improve not only job commitment, performance, and organization behavior, but also personal and family satisfaction. Similarly, WFB has also been associated with a decrease in psychological and emotional distress, exhaustion, anxiety, and tension (Rahman et al., 2017; Ramos, 2015).

However, all of the aforementioned studies on volunteering and work-family were focused on individuals who volunteer in traditional face-to-face environments or onsite volunteering. Regardless of the fact that the work nature of online volunteering differs significantly from that of onsite volunteering due to the modern ICT tools, all types of volunteering entail a sacrifice of time (Danaiata, Gligor-Cimpoieru, Hurbean, & Munteanu, 2013; Ellis & Cravens, 2000; Schlachter, 2018). These authors noted that online communication and information searching have penetrated into non-working hours, potentially affecting the work–family balance. Online volunteering,

however, has received less research attention despite the negative implications for individuals and their families associated with work-family interface.

Due to emerging trends in volunteerism for nation sustainable development (Economic Planning Unit, 2019) as well as the global pandemic outbreak, volunteer participation have seen a considerable increase in demand. It is not surprising that onsite volunteer have been the most frequently studied within several areas in the literature. Most researches in onsite volunteering focused exclusively on the concept of volunteering (Cravens, 2014; Ellis, 2012; Ellis & Cravens, 2000), potential (Amichai-Hamburger, 2008; Cravens, 2006; Danaiata et al., 2013; Meesters & Van De Walle, 2014), role as volunteer (Chung, Im, & Kim, 2020), implications (Conroy & Williams, 2014), or social capital (Ludwig et al., 2014). No research, to date, has studied the practices of online volunteers of doctors in balancing work and family lives. The majority of recent studies have concentrated on the use of information and communication technologies (ICT) as a tool for various purposes, rather than on the role of online volunteers (Bodker, 2016; Burney, 2019; Choroszewicz, & Kay, 2020; Derks, Bakker, Peters, & van Wingerde, 2016; Ma, Xie, Tang, Shen, & Zhang, 2016). The following is a brief summary of the study that has been conducted in the area of volunteering onsite or online.

To better understand why people volunteer, Chelladurai and Kerwin (2018) reveal that attitudes, values, principles, and personality are the primary factors that determine onsite volunteering motivation. Volunteers in health care traditionally perform assignments that are lengthy and time-consuming. Thus, factors such as protection

(volunteering as a way to make up for low self-esteem or life experiences) were among the motive that may lead individual to volunteer (McNamee & Peterson, 2015). Other motivating factors, such as intrinsic (Aydinli et al., 2016) and altruistic motivations (Garbay, Gay, & Claxton-Oldfield, 2015), have also been proposed to explain volunteer participants' actions on onsite volunteering.

In the online platforms, studies on motive among volunteer may show similar factors as those who involve in onsite volunteering. Existing literature suggest factors that keep individual's online volunteerism are sense of relatedness (Naqshbandi et al., 2020), understanding and values (Cox, Oh, et al., 2018). Surprisingly, Seddighi and Salmani (2019) reported that altruism is a more significant motive in online volunteers, based on the assumption that self-interested behaviors including social and psychological motivations may be less common. Several factors influence health-care professionals' decision to remain in virtual health communities, including helping, reputation, moral duty, and enjoyment (Imlawi & Gregg, 2020). Moreover, Liu et al. (2016) conclude that, due to its cost-effectiveness, online volunteerism will continue to grow, though at the expense of time and operating costs in integrating technologies.

According to several research, volunteering has a positive effect on health (Julia-Sanchis, 2020; Gragnano, Simbula, & Miglioretti, 2020), life satisfaction (Song, Gu, & Zuo, 2019), enjoyment (Lee, 2019), and psychosocial well-being (Chung, Im, & Kim, 2020; Schlachter, 2018; Stukas et al., 2016). Employees practice volunteerism, internalized volunteer roles as their goals are supported by volunteering programmes (Cho, Wong, & Chiu, 2020; Grant, 2012). For instance, a study of Singaporean

volunteers revealed a significant relationship between volunteer management and volunteers' willingness to engage volunteering, with factors such as reward and appreciation, support, flextime, training and social interaction (Cho, Wong, & Chiu, 2020). Another research by Song, Gu and Zuo (2019) found that more regular voluntary action was linked to higher levels of life satisfaction.

Considering that online volunteering is a fairly notable phenomenon, extensive research into its challenges and opportunities is needed. As Kim et al. (2019) reported, onsite volunteerism poses a number of obstacles to individuals; likewise, online volunteerism presents a range of challenges too. A qualitative study by Seddighi et al. (2020) identify lack of cooperation, cultural problems, facilities, reward, and volunteer management are among the difficulties of online volunteering in Red Crescent Society. The authors claim that the online volunteer's lack of accountability originated from a failure to adhere to the task's schedule and deadlines. Meanwhile, cultural constraints focusing on male-female relationships have had an effect on online tasks.

Though there were few studies focused on individuals who volunteer in online platforms and their impact on work-family balance, studies on people who use ICT were primarily used to inform the study. This is due to the fact that the effects of using technology may have a similar effect on individuals.

Past studies suggest that the use of ICT in individual life is a double-edged sword (Ma et al., 2016). The technology allow individuals to be flexible enough to handle their work and non-work tasks, and to connect job from any distance (Burney, 2019;

Choroszewicz & Kay, 2020). In addition, the rise in global competition and the need to react immediately set a new standard for individuals to work without boundaries (Mellner, Aronsson, & Kecklund, 2014; Wang, Liu, & Parker, 2020). This issue seems to be of considerable importance, given that there are greater responsibilities in the nature of work, where individuals are made accessible through modern technologies.

ICT, however, is also criticized for blending work and family boundaries and, at the same time, blurring them (Derks, Bakker, Peters, & van Wingerden, 2016; Xie, Ma, Zhou, & Tang, 2018). As Derks, Bakker, Peters and van Wingerde (2016) have pointed out, too much technology permeability can blur the boundaries of multiple domains, making it difficult to deal with and can cause a poor work-life balance. Certain technology features, such as usability, dynamism, anonymity, reliability, and presentism, may contribute to work-family conflict, work overload, and role ambiguity (Ayyagari, Grover, & Purvis, 2011). Bodker (2016) indicated that when individuals are connected to the technologies, they are likely to experience a disturbance in their time and space including family hours. Thus, online volunteers of doctors may be unable to find a point of balance between different life domains, which may cause them to experience work-family conflicts.

Work-family conflicts arise as a consequence of the incompatibility between the demands of the work and family roles (Chen & Powel, 2012; Hamid & Amin, 2014). This conflict can take two forms: work-family conflict and family-work conflict. Work-family conflicts occur when the demands from paid work make it difficult to perform family obligations while family-work conflicts happen when the family

demands limit the performance of work duties. However, individuals may have positive experiences of combining work and personal life, known as work-family enrichment or work-family facilitation (Greenhaus & Powell, 2006; Leduc, Houliort, & Bourdeau, 2016). The sense of balance between the different spheres of life could be attained once individuals have benefited all the roles they play. In particular, one role could be improved by using resources created in another to satisfy the expectation more properly. Current research by Oludayo and Omonijo (2020) for example has revealed that spouse or family member's role helps to minimized job strain and enhanced the work-family balance.

Meanwhile, the literature on the relationship between online volunteering and work-family conflict is sparse. Most of the past studies centered on the use of ICT for volunteer purposes. In addition, limited studies focus to highlight the online volunteer roles in achieving a balance life. Huynh, Xanthopoulou, and Winefield (2013) proposed that work or non-work resources reduce the bad effects of job demands on well-being. Support from family and friend may also alleviate burnout and family conflict related to volunteering (McNamee & Peterson, 2015). Likewise, Cowlshaw et al. (2014) hypothesized that organizational resources, such as training and leadership, gained from volunteering activities enhance work-family facilitation in the sense that the skills or experiences from the volunteering activities improve family task capabilities.

By contrast, a conflict that arise from the challenging demands of volunteering and other works or family has been found to result in work-family conflict, decrease well-

being and burnout (Cowlshaw et al., 2014). Others argued that work-family conflict among volunteers occurs due to the disturbance in work or family routines (Cowlshaw, Evans, & McLennan, 2010). For example, online volunteering activities done during working hours or after working hours (i.e., night time) may intrude into paid work.

As suggested by Hossain (2014), Malaysian working women are still expected to be the main homemakers, being responsible for childcare and playing their vital roles as wives and mothers, despite earning an income for the family. As a result, career women tend to experience a higher level of job stress, work overload, and emotional exhaustion (Makhija, Naidu, & Rakesh, 2017). Elsewhere, Parker and Wang (2013) observed that women who still performed most of the household chores and childcare duties are inclined to have numerous stress in the work and family.

While several researchers have focused on the negative effects of volunteers in balancing work and family, Frone (2003) proposed a positive interaction, or sometimes described as 'work-family enrichment' or 'work-family facilitation'. Work-family facilitation means involvement in one role (such as work/family) can positively influence the other role (such as paid work/ family). According to Goodman (2012), professionals such as doctors, generally will have a better opportunity in gaining the resources (e.g., developmental gains, job characteristics, social support from co-workers and boss, supportive culture, and job reputation) from the environment, which may contribute to work-family facilitation, suggesting that job status may give power to the availability of resources.

One of the sources of work-family strain is insufficient time parents spend together with their families. Lack of family time reflects that the parents are extremely busy and it may affect the family functioning and well-being, particularly if both parents are employed (Offer, 2013). Therefore, spending quality time with children is important so that they can gain benefits from such attachments (Speights, Grubbs, & Rubin, 2017). However, they stressed that parent may view quality time in a different way, where the emotional work and meanings are attributed to differentiate their action from the others. Although it has been shown that volunteering can lead to less work-life conflicts, there is a suggestion that multiple roles have inconclusive impacts on work-family balance (Ramos et al., 2015).

Previous studies have reported that individuals differ in their boundary management (Grant, 2012; Kossek & Lautsch, 2012). When individuals organize and separate the role demands in the sphere of home and work, they are engaged in boundary management strategy. Ashforth, Kreiner and Fugate (2000) claimed that employees tend to integrate between multiples demands in their lives, thus providing them with flexibility and allowing them to deal with problems in any domains that arise. However, Kossek (2016) affirmed that integrating boundaries may result in more work-family role conflicts. Online volunteers of doctors have to be able to control how and when they do their online voluntary activities, complete their paid work, and manage family demands by choosing the best strategies to accommodate their situation.

As doctors volunteer online via the social media platform, different challenges and opportunities requires them to reconsider in handling matters related to their work and family interfaces (Wang et al., 2019). They can reply to emails on the weekday or weekend, and work off the traditional office setting. When the technology is accessible at any time, several authors (Kotecha, Ukpere, & Geldenhuys, 2014; Schlachter et al., 2018; Wright et al., 2014) highlights that it may raise serious conflict between work and family. Besides, the technology can apparently be used to integrate work and family responsibilities, resulting in better work-family satisfaction (Bodker, 2016).

Allen, Johnson, Kiburz and Shockley (2013) reported that flexible work arrangement (FWA) is helpful for individuals to manage the blurring boundary between work and family errands. In addition, individuals who work flexible hours can alter their working time according to their personal needs, thus, helping them to achieve work-family balance. As such, employees are able to decide the best way to allocate time, concentration, and energy across multiple domains. For example, they are able to adjust their schedule in a way that allows them to better manage non-work matters, such as responding to emails from patients or contributing a new article on the website during a break at work, thus freeing them from the anxiety of managing non-work affairs when flexibility is not an option. These types of flexibility are referred to as spatial flexibility (where work is conducted) and temporal flexibility (when work is conducted). Both spatial and temporal flexibilities facilitate employees to balance their family and work demands.

In the case of doctors volunteering online, Michel et al. (2011) claimed that a higher status job allows for more flexibility (e.g., doctors have the flexibility to request working time and shift work) and better control, allowing them to attend family responsibilities. However, Michel et al. (2011) argued that a higher status job, such as doctors, entail more responsibilities and this creates more stress and difficulty in managing between work and family. Moreover, shift work among doctors is seen as an antecedent of work-to-family conflict (Jacobsen & Fjeldbraaten, 2018). Therefore, doctors volunteering online has produced permeable borders that exert negative impact on the work-family balance experiences.

From the above review on volunteering studies, it can be concluded that there are not many studies can be found in relation to online volunteer, particularly when attaining work and family balance. Most of the studies were directed to specific studies such as on motivation, participation, volunteer roles, challenges and its impact. Table 2.2 provides the area of some prominent research conducted among volunteers regardless its platform, onsite or online. Based on the table, this study address the gap by assessing the experience of doctors volunteering online in a VHC, which include to identify the role and strategies used by doctors in attaining WFB.

Table 2.2

Area of Research among Volunteers

Area of research	Medium of volunteering		Outcomes / Findings
	Online	Onsite	
Work-family interface	-	<ul style="list-style-type: none"> • Cowlshaw et al. (2014) 	<ul style="list-style-type: none"> • Volunteer experience work-related burnout and thus impacted work life balance.
	-	<ul style="list-style-type: none"> • Kelliher, Richardson, & Boiarintseva (2019) • Sirgy & Lee (2018) 	<ul style="list-style-type: none"> • Volunteering help individuals / employees find a better work-family balance (WFB).
Motivation	-	<ul style="list-style-type: none"> • Aydinli et al. (2016) 	<ul style="list-style-type: none"> • Volunteering by non-parents was linked to explicit prosocial motivation, whereas volunteering by parents was linked to implicit prosocial motivation.
	-	<ul style="list-style-type: none"> • Chelladurai & Kerwin (2018) 	<ul style="list-style-type: none"> • Attitudes, values, principles, and personality are the primary factors that determine onsite volunteering motive.
	-	<ul style="list-style-type: none"> • Garbay, Gay & Claxton-Oldfield (2015) 	<ul style="list-style-type: none"> • The most powerful motivator for French hospice volunteers is altruism.
	<ul style="list-style-type: none"> • Cox et al. (2018) 	-	<ul style="list-style-type: none"> • Understanding and values motives is the motive that kept individual to volunteers.
	<ul style="list-style-type: none"> • Naqshbandi et al. (2020) 	-	<ul style="list-style-type: none"> • Relatedness is an important indicator of volunteer motivations.
Participation	<ul style="list-style-type: none"> • Seddighi & Salmani (2019) 	-	<ul style="list-style-type: none"> • Volunteering online has the potential to reduce prejudice and health inequalities.
	<ul style="list-style-type: none"> • Liu et al. (2016) 	-	<ul style="list-style-type: none"> • Online volunteerism will continue to grow, at the expense of time and operating costs in integrating technologies.
Volunteer Roles	<ul style="list-style-type: none"> • Yang et al. (2019) 	-	<ul style="list-style-type: none"> • Participants in online communities perform a variety of roles, ranging from seeking support to providing assistance.
	-	<ul style="list-style-type: none"> • Chung, Im & Kim (2020) 	<ul style="list-style-type: none"> • Volunteer participation was found to mediate the relationship between other-oriented motives (e.g., self-oriented) and psychological well-being.
Challenges	-	<ul style="list-style-type: none"> • Kim et al. (2019) 	<ul style="list-style-type: none"> • Time commitment was the major obstacle among volunteers, which

		<ul style="list-style-type: none"> • Mcgeehan, Takehara, & Daroszewski (2017) 	interfered with personal and work time.
	<ul style="list-style-type: none"> • Seddighi et al. (2020) 	-	<ul style="list-style-type: none"> • Online volunteers face challenges such as a lack of communication, cultural issues, facilities, rewards, and volunteer management.
Impact	-	<ul style="list-style-type: none"> • Julia-Sanchis (2020) 	<ul style="list-style-type: none"> • Nursing students who participate in volunteer programmes have a better chance of developing more positive attitudes toward mental illness.
	<ul style="list-style-type: none"> • Imlawi & Gregg (2020) 	-	<ul style="list-style-type: none"> • Helping, reputation, moral duty, and enjoyment are all factors that impact health-care professionals' decision to participate in virtual health communities.

2.4.2.1 Managing Borders

Scholars defined boundaries as “mental fences used to simplify and order the environment”, or “physical, temporal, emotional, cognitive, and/or relational limits that define entities as separate from one another” (Ashforth et al., 2000, p. 474). The boundary or border between work and non-work life is formed by different domains of experience, the workplace, and the home. The term boundary and border are used interchangeably in this study. To date, no studies have examined the blur boundary in work and family domains from the perspective of doctors volunteering online although studies by Cowlshaw et al. (2014), Skinner and Ichii (2015) and Voydanoff (2005) explored the boundary from the viewpoint of onsite volunteers.

Boundaries provide means for individuals to recognize, establish, and demarcate different domains. Primarily, employees define clear boundaries framing their work and family spheres when they are at the workplace. Moreover, preserving the

distinction permits individuals to identify the cognitive, behavioral, and communicative components of specific domains (Smith, 2014) as every domain possesses its own role responsibilities. Thus, employee behaviors, attitudes, and priorities will enact accordingly within each domain.

Boundaries are easier to maintain when roles are separated. Conversely, when roles are integrated the role conversions are less difficult; yet they can also create confusion in the demands of multiple roles, increasing the possibility of role blurring. For example, when doctors volunteer online, they are working in a boundaryless time and space. As such, not only will they experience stress, but such work arrangement also erodes the boundaries between their work and family life (Mellner et al., 2014).

There are two strategies to manage boundary, which is integration and segmentation (Nippert-Eng, 1996). The way individuals manage their boundary differ greatly; some prefer to maintain work and family roles separately (i.e., segmentation) while others permit them to blend together (i.e., integration) (Ashforth et al., 2000; Daniel & Sonnentag, 2016). For example, integrators might take extra work home while segmentors will likely to finish extra work in the office. Individuals who allow more permeable boundaries and boundary flexibility are more likely to experience work-family conflict (Kossek, 2016). Similarly, individuals with preferences for segmentation, may result in lower work-family outcomes when they have less access to segmenting policies such as flextime (Rothbard et al., 2005). On the contrary, Derks et al. (2016) disputed the claim that flextime allows for a flexible and impermeable boundary, hence facilitating those with high work-family conflict in coping with them.

Furthermore, Mellner, Aronsson and Kecklund (2014) found that male employees benefit from the segmentation strategy, resulting in a more work-life balance when compared to female segmentors. In short, individuals apply unique boundary management strategies to reduce work-family conflict, thus leading to improved work-family balance.

Kreiner et al. (2009) suggested a variety of tactics to recalibrate the work-home boundary negotiation including temporal, behavioral, physical and communicative tactics. For instance, in a temporal tactic, an employee may “bank” time from one domain to be used later. So, if the employee has to work on a night shift normally reserved for the family, he or she would bank that time and take it out of work time later (Lirio, 2017). The employee also may use a communicating expectations tactic where he or she makes known of his or her preferences concerning the work-home boundary to his or her stakeholders, such as a spouse, children, staff, and colleagues. When the employee has successfully organized and separated the role demands between the work and family life, a positive outcome, such as increased creativity and commitment takes place (Madjar, Oldham, & Pratt, 2002).

Individuals whose jobs are highly dependent on information and communication technology (ICT) (e.g., doctors who volunteer on the Internet) develop their own strategies for balancing work and family commitments. Individuals enforce the restriction on work-related ICT usage while at home during non-work hours, according to Olson-Buchanan, Boswell, and Morgan (2016). Similarly, Park and Jex (2011) discovered that segmentors establish a stronger border around ICT usage in

order to reduce the psychological work-family disruption. Thus, in this study, the researcher posits that doctors can create their own boundaries for participating in online volunteering activities, whether at work or at home.

2.4.3 Theories of the Work and Family

Over the past two centuries, the meanings of 'work' and 'family' have shifted greatly, and new ideas have also been employed to explain the evolving relationship between work and family. Rapid technological advances, increasing women's participation in employment, a shift towards a more simple service economy and demographic trends are among some of the drivers of change (Higgins, Duxbury, & Lee, 1992; Simpson, 2020). All these transitions call for the creation or use of newer theories to explain the relationships that have changed. New measurement systems are required to carry out research in different environments especially when the online phenomenon has become the backbone of society with significant socio-economic impacts.

The formal academic study of work-family relationships started in the 2000s, and there are a range of theories, models, and approaches to choose from, some of which draw on and extend previous approaches, while others directly challenge them. It is important to be aware of conceptual and methodological considerations when analyzing this body of work. This section reviews previous trends in theory that have been applied to work-family relationship studies. Theories such as Spillover, Segmentation, and Boundary can be used to explain the connection between work and family in the lives of doctors who volunteer online. The theories chosen provide a strong foundation for the entire study.

2.4.3.1 Spillover Theory

Spillover theory is grounded in ecological system and role theories. This theory proposes that individuals who engage in diverse roles (e.g., employees, parents, spouses) have diverse role expectations. These roles may occur in separate domains of the individual's life, such as at work or home, thus allowing the impacts of occurrence in one domain to enter into another. According to Du, Derks and Bakker (2018), conflict may occur when the role expectations of work domain compete with the expectations of the family. When this happens, a negative spillover is said to take place.

Staines (1980) described spillover as a “fundamental similarity between what occurs in the occupational environment and what transpires elsewhere” (p. 112). He claimed that a positive connection exists between work and family domains, such as high levels of commitment in work duties will result in high commitment in family duties. The spillover theory also postulates that emotion and behavior in one domain may influence the other domain either negatively or positively (Clark, 2000). Positive spillover refers to the fact that satisfaction and accomplishment in one sphere may convey satisfaction and accomplishment in another sphere. Negative spillover refers to the fact that difficulties and depression in one sphere may bring along the same emotion in another domain.

Nippert-Eng (1996) argued that some individuals do not differentiate between work and family regardless of their thought, time, or space. Such individuals prefer a low separation of boundaries between work and family roles. For example, employees

make themselves accessible to work-related e-mails at home or receive private calls at work. These individuals can reorganize their workday in an impromptu manner to combine irregular family demands and make heavy use of work-at-home. The circumstances may further contribute to a more obscure border of work and family realms. Spillover has also been termed by Staines (1980) as extension, generalization, familiarity, identity, isomorphism, continuation, and congruence.

Spillover theory has some limitations. For one, it fails to explain how work-family (WF) conflict arises and how work-family balance is achieved (Clark, 2000). Spillover theory also confines the individual matters to a psychological view; hence, the dilemma raised from the restricted examination on the issues of achieving work and family equilibrium. As it is rooted from role theory, this theory attempt to explain much of the individual issues in dealing with cross-functional roles, and not on the family roles (Jackson & Schuler, 1985). Therefore, this theory is inadequate to unfold the clear relationship between the work and family problems.

2.4.3.2 Segmentation Theory

Segmentation model hypothesizes that professional and other personal matters are two different domains and there is no relationship between them. It suggests that one domain (either work or family) does not impact the other (Zedeck & Mosier, 1990). In this sense, the segmentation theory contradicts the spillover theory, where work and family are complementary, and, thus, influence each other.

The early ideas of segmentation theory suggested a common separation between work and family domains as both roles entail different meanings, tasks, and behaviors, hence, retaining a physical and a temporal separation. Later, a new point of view on segmentation approach was introduced. Nippert-Eng (1996) viewed the separation between work and family domains as a boundary between them, which seems impermeable. Individuals who conform to a high boundary separation aim to make work and family responsibilities separate. For example, an employee might work a full day uninterrupted by family responsibility and never bring work home and deal with family affairs only during non-work time. Kossek, Noe and DeMarr (1999) analyzed segmentation as an active psychological process which can be used as tools to manage the boundary between work and family. Kylin (2007) further affirms that the existence of these borders and the process of developing them are not well understood and more investigation is needed. This theory also has been referred to as separateness, compartmentalization, independence, and neutrality theory (Zedeck, 1992).

Although this theory proposes the significance of WF conflict, it is unable to address the foundation of work and family balance. Guest (2002) argued that this theory is attainable from a theoretical view rather than a theory with empirical evidence. Moreover, this model would have been far more useful if it incorporates an analysis of nature, causes, and consequences of WF balance. Kylin (2007) also debated how this model could be significant from a different perspective, such as from either a stress or coping viewpoint. The theory has been used in work and life research to establish

connection between multiple aspects of people's lives in order to minimize strain from multiple roles (Bello & Tanko, 2020).

2.4.3.3 Boundary Theory

Boundary theory by Ashforth et al. (2000) is another theory used to understand WF boundary management. Boundary theory is based on general cognitive theory of social classification that focuses on the ways that people create and maintain boundaries in an effort to simplify the environment around them. The outcomes of the theory concentrate on the meaning assigned to one's work, home and other places roles and the ease of transitions between the domains. Primarily, boundary theory discusses the psychological and physical boundaries exist between individuals' work and family domains that characterize the two entities as different from one another (Ashforth et al. 2000; Nippert-Eng, 1996). Ashforth et al. (2000) suggested that individuals differ in their preferences; to separate or to integrate different life domains. Although segmentation and integration lie on a continuum, it is sparse that any employee would demonstrate total segmentation or total integration.

Moreover, boundary theory illustrates boundaries between life domains on the two dimensions; flexibility and permeability. Furthermore, this theory posits that contextual workplace factors may as well influence boundary management (Ashforth et al., 2000; Kreiner, 2006). As a result, the employee and the workplace could construct the physical and psychological boundaries between work and family domains. For example, some working parents prefer to finish work assignment at home in the evening because they have to address family responsibilities at night. On

the contrary, other working parents prefer to finish work completely in the office. Besides, one workplace also may support flexible working conditions while other workplace may need a fixed schedule.

Although Boundary theory can be applied to a range of work-family topics, yet as the outcome of interest in this theory is not on achieving work-family balance; researcher will pursue to adopt the Border theory. Compared to boundary theory, border theory is a comparatively modern theory that increases our knowledge of the relationship around work and family in societies (Chen & Powel, 2012). Moreover, Allen, Cho and Meier (2014) noted that Border theory comprise both of the psychological as well as physical features of the borders which segregate the aspects of time, place and individuals related to work and family balance realization. Based on the above explanations, the Border theory is the most appropriate theory in search for answers related to this study.

2.4.3.4 Border Theory

Clark (2000)'s theory views work-family balance from a different perspective. This theory's concepts have shown that an individual's role occurs within the confines of life aspects that are separated by a temporal, physical, or psychological divide known as a border. One of the issues discussed in the theory is border crossing, particularly between the work and home domains.

This theory opens up a lot of possibilities for analyzing the nature of borders, permeability, and how people move between work and home. Moreover, this theory

can be used to explain an individual's motivation and behavior when participating in boundaryless tasks or activities (e.g., online volunteering) where the boundaries between work and home are becoming increasingly blurred.

In the search for balance, border theory (Clark, 2000), as discussed in detail in section 2.5, is sufficient for the analysis of work-family balance among online volunteer doctors. This theory emphasizes the dimension (work and family) and variable (nature and strength of border, border crosser) that can be taken into account in the study of doctors volunteering online. Prior research (Gao & Zhao, 2014) has shown that border theory and other existing theories are incapable of completely explaining the dynamics of online volunteer participation in the virtual community. It is hoped that the proposed framework, which is based on the Border Theory, would address some of the theory's weaknesses, providing for more insight into online volunteering as a means of crossing borders in a flexible, complex environment. In turn, the earlier theory improves on previous views as a result of technological advancements and changes in work and life domains over time.

2.4.4 Analysis of Theoretical Review

The outcomes of the theories reviewed suggest that work and non-work domains are connected in unique ways. The fundamental concepts of spillovers, segmentation, and boundary, as well as the aspects of achieving balance, may not be appropriate for the study. Furthermore, the theories lack a detailed explanation of the concept of borders (Kylin, 2007), which is important for this study. Table 2.3 shows the study of all

theories reviewed, based on the theory's concentration, the border principle, and the main issues that the theory lacks.

Table 2.3

Analysis of the Theories Reviewed

Theoretical Foundation	Citation	Emphasis	Studies on the border concept	Issues concerning the theory
Spillover theory	Staines (1980)	Focus on the emotions and behaviors that spill over from one domain to the other, positively or negatively	A failure to investigate the work and non-work border	Fails to explain how WF conflict arises or how WF balance is achieved
Segmentation theory	Zedeck, & Mosier (1990)	Focus on work and non-work as two different domains with no relation.	A failure to investigate the work and non-work border	The existence of borders and the process of their development are poorly defined
Boundary Theory	Ashforth et al. (2000)	Focuses on how people create and maintain boundaries in order to simplify their environment	Individuals manage the borders between life domains on two dimensions: flexibility and permeability	There is an overabundance of emphasis on WF segmentation and conflict
*Border Theory	Clark (2000)	Focus exclusively on border management, which may have an impact on the work-family balance	Draw attention to the nature and strength of the border: psychological, temporal, and physical aspects that may influence the ability to balance WF. Flexibility, permeability, and blending are among the domain dimensions investigated.	The emphasis is on integrating WF and achieving balance

* This study was guided by Border Theory

2.5 Theoretical Framework of the Study

Previous research used work-family border theory to understand the phenomenon at individual and group level (Adisa et al., 2017). Studies by Karassvidou and Glaveli (2015) and Schieman and Glavin (2016) used the work-family border theory to help companies understand how to better support their workers at work and at home. Current study employing work-family border theory applied to modern technology has shown that the use of such technologies blurs the boundaries between work and non-working spheres (Adisa et al., 2017; Wang & Chen, 2017). Technologies identified were mobile technologies like smartphones. Evidence suggests that using a smartphone can both harm and support with work-life balance.

Moreover, Wellman, Haase, Witte and Hampton (2001) offer an excellent description of the Internet as a medium that is no longer perceived alien due to its widespread use in daily activities. It has been a normal practice in individual's lives over the last two decades. Almost all people representing all walks of life are persistently using various related internet technologies in their daily lives because of its effectiveness, efficiency, and time saving. These are the major reasons for doctors who choose to participate in online volunteering activities. The online volunteering doctors have brought a new domain to their daily lives by venturing into cyberspace. As a result, the use of the work-family border theory, as suggested by Gurney (2010), is necessary to understand the complexity of this new form of 'life.' The concept of border theory is relevant to the study of online volunteering doctors and the balance of work and family life. However, the cyber space, along with work and family, is included as one of the

domains in this study because the aim is to assess the roles of online volunteer doctors in the virtual environment.

The study's theoretical framework was centered on Clark's work-family border theory (2000). The theory contributes to a better understanding of the issues surrounding work-family management and negotiation. While the original theory focuses on the domains of work and family, this study expands on the concept of work-family balance by incorporating other important domains, such as community activities (e.g., online volunteering). The inclusion is justified by Clark's recommendation that "permeability is the degree to which other domains may enter" when defining a border. Aside from work and family, the concept clearly stated the need to include more related domains. The purpose of this study is to explore at work-family issues from the viewpoint of doctors who are juggling not only their work and family commitments, but also their online volunteer roles.

According to the border theory, both work and family are regarded as independent spheres that influence one another regardless of physical (place), temporal (time), and psychological borders. The interactivity level between the two domains signifies the strength of the separated border. Those who were spotted passing through the border regularly are deemed as border-crossers (Clark, 2000). The border-crossers are usually able to structure their surroundings and negotiate on the separated line between work and family.

The theory also describes on the boundary integration or segmentation, and management attributes, as well as the relationship between border-crossers and others who are together with them either at home or work. The characteristics of a border significantly contribute to the work and family life segmentation or integration style of the individuals that will eventually influence the work-family balance (Clark, 2000). Thus, the current study tries to understand the effect of the border characteristics and strength on the integration and balancing of the work and family life among the online volunteering doctors.

According to Clark (2000), “balance is attained when a person feels comfortable with the way they have allocated their time and energy, and integrated and separated their responsibilities at work and at home”. Therefore, different people with various experiences will likely to develop distinctive requirements or preferences that shape their views on balance.

The work-family border theory is chosen as it demonstrates considerable promises. Although this theory has been used to explain a number of research in work-family, but there remain some gaps to be explored in the theoretical application. To date, little attention has been paid into the work-family border theory research which applies the multiple roles among doctors volunteering online with many transitions in real life and virtual life. This is happening when individuals, particularly doctors, are moving between their roles, as opposed to dealing with online volunteering tasks after their working hours and during weekends as well as keeping work at certain working hours. Even though the issues relating to the increased flexibility and blurring boundaries due

to availability of technology around the work or family domains has been widely researched, most of them still emphasizing on the basis of separable roles.

There are also gaps in the areas of work-family balance, border theory, and employees who volunteer online. On the aspect of border crossing between individuals engaged in online interaction, the theory lacks sufficient evidence. In the border theory, the mechanism by which individuals transcend the virtual and physical border is still not easily understood. The majority of contributions to this theory center on onsite volunteers rather than online volunteers (Chighizola, 2020; Fiernaningsih & Herijanto, 2020; Voydanoff, 2008). Therefore, the results of an onsite volunteer may not be easily applicable to an online volunteer, whose platform, resources, and time spent differ significantly (Ihm, 2017). Since doctors who volunteer online have high-demand jobs, the job, as well as other aspects of their lives (such as family and online volunteering tasks), can make it difficult to strike a work-family balance. As a result, this study will clarify the border concept and assess work-family balance as a component of the new "borderless" worldview.

The work-family border theory comprised of four core concepts: (i) home and work domains; (ii) border between work and home; (iii) border-crossers; and (ii) border-keepers as well as other domains (Clark, 2000). The four concepts are illustrated in Figure 2.1.

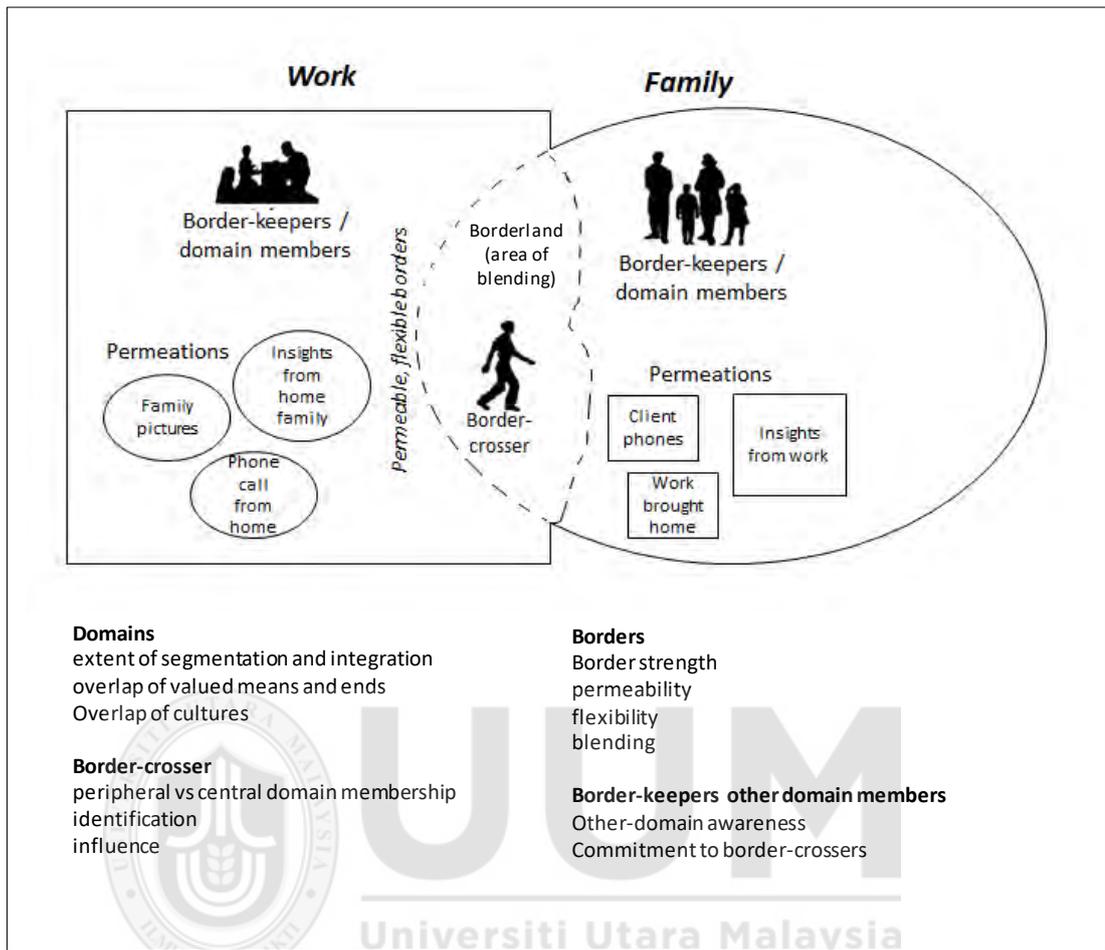


Figure 2.1 Work-family Border theory (adopted from Clark, 2000)

2.5.1 The Work and Family Domain

The border theory distinguish the ‘work’ and ‘home’ into two separate spheres according to various expectations, cultures, rules, and responsibilities (Clark, 2000). However, informant represents the sole ‘member’ of both of the mentioned spheres. Consequently, the following exclusive tasks, such as rules, thoughts, and behaviors will be conducted by the members of each sphere. The members are also considered as border-crossers, who will be managing and negotiating both the work and family

domains along with the borders between them for the purpose of attaining balance. Moreover, both domains do satisfy different purposes even though being assessed in terms of accomplishments, companionship, or individual contentment.

It is evidenced (Nippert-Eng, 1996) that both domains can usually be managed by individuals even though there are differences on the cultures, purposes, and results. For instance, for those who integrate the two domains, the individuals are not able to draw the line among the tasks associated to work or home. On the contrary, those who apply segmentation would have a clear separation concerning the work and family related matters. Thus, the process of segmentation or integration in achieving balance between work and family can be determined by exploring the border between the two domains as well as the process of shaping and managing it.

2.5.2 The Borders

The 'border' that separate between the work and family domains is the main emphasis of the border theory. This border has to be managed appropriately to produce and sustain a balance between the domains. A borderline is also required to denote the beginning and ending of such domain as defined according to the respective physical, temporal and psychological borders (Clark, 2000). The physical border refers to the location of the domain-relevant behavior such as the actual walls of one's workspace or home, whilst temporal represents the time period adjusted for work and family, such as an individual work schedule. The psychological border, on the other hand, denotes the thinking patterns or emotions of a domain. In comparison, some borders are more permeable than others; permitting a physical movement from one domain to another

while others may be psychological in nature. Although the psychological borders are generally self-developed (Rychlak, 1981, as cited in Clark 2000); the physical and temporal borders are used by individuals to structure the rules that construct the psychological borders.

The characteristics, together with the shaping and managing of the borders may significantly affect the segmentation or integration of the two domains, particularly in influencing the work-family balance (Clark, 2000). Flexibility, permeability, and blending are three main characteristics of a border, as pointed out by the border theorists (Ashforth et al., 2000; Clark, 2000). These three characteristics that must be considered in the border theory (Clark, 2000) mutually define the strength of a border.

2.5.2.1 Permeability

Permeability characterizes “the extent to which a boundary permits psychological or behavioral elements of one role or domain to spill into another” (Ashforth et al., 2000; Clark, 2000; Hall & Richter, 1989). This attribute also refers to the degree where individuals may be physically located in one domain but behaviorally or psychologically in another (Ashforth et al., 2000). One example of permeability refers to the case whereby a doctor is able to accept a phone call from his/her spouse while at work or work-related phone calls or e-mails from his/her colleague at home.

Nevertheless, many analysts contended that the permeability of a physical or temporal border is seen as an interruption in which individuals have very little control. Chen and Karahanna (2014), for example, argued that the interruptions may come from

work or non-work sources. The work- and non-work related interruption occurs when someone from work (e.g., colleague) disrupts to discuss business matters and those outside of work (e.g., family) intrudes on conversing personal concerns respectively. A psychological permeation (Clark, 2000) occurs when there is a spillover of disgusting feelings and conduct coming in from workplace to an individual's home work to home life or vice versa are transferred to other domains (Evans & Bartolom, 1980, as cited in Clark 2000). However, the psychological permeation is not necessarily negative.

Domain integration also offers the opportunity for individuals to move easily between various roles (Smith, 2014). This indicates the permeability of the domains boundaries whereby family may be more interrupted by work matters or vice versa (Ashforth et al., 2000).

2.5.2.2 Flexibility

Flexibility denotes the malleability of the boundary between two or more roles/ domains that is able to magnify or shrink towards accommodating the requirements of diverse responsibilities (Clark, 2000; Hall & Richter, 1989). Flexibility can also be referred as the extent in which spatial and temporal boundaries are pliable (Ashforth et al., 2000). Hence, individuals can cognitively or behaviorally transform from a role to another in fulfilling the demands of each domain (Bulger, Matthews, & Hoffman, 2007).

A flexible boundary allows more roles to be performed at any time in several scenarios (e.g., a remote worker), whilst a less flexible one confines the time and location of carrying out a specific function (e.g., medical doctors located in a physical hospital) (Hall & Richter, 1989). As an example, a doctor's job in a hospital would be regarded as moderately low boundary flexibility since it might be difficult for him or her to rearrange the tasks of fetching and sending his or her child to school activities during a shift. In contrast, a university lecturer would experience a moderately high flexibility in conducting his or her job due to a number of tasks (e.g., conducting research, writing books, and updating a post for an online volunteering website) that has to be set forth, if required in meeting the demands of the other responsibilities (e.g., taking a sick child to a clinic).

2.5.2.3 Blending

Blending “arises when a high level of flexibility and permeability exist within borders” (Clark, 2000). Clark further pointed out that a blended border signifies the “area around the presupposed border is no longer exclusive to one domain or the other but called either domain”. On the other hand, a psychological blending takes place when individuals apply their own or family experiences in performing their work or use their work experiences to enhance their family life. Physical blending occurs when individuals use a laptop and Internet access at home to complete work-related tasks. In temporal blending, individuals can juggle two things in both work and family domains simultaneously, such as discussing family matters while doing their work.

However, as asserted by Clark (2000), the blending of similar domains can lead to the integration and a sense of perfection.

2.5.2.4 Border Strength

The two main characteristics of a border as proposed by Clark (2000) are permeability and flexibility, which are used to determine its strength. Typically, boundaries permit an individual to focus more on the domain that is presently stronger. As such, the stronger border is related to the border that is impermeable (closed to influence), inflexible, and does not allow blending. On the contrary, a border that is flexible, permeable (open to influence), and allows some sort of blending is considered weak (Ashforth et al., 2000). The determination of balance arises from either a strong or weak border. However, the balance depends on certain situation, such as the domain or individuals (Lambert, Kass, Piotrowski, & Vodanovich, 2006). This is also supported by Ashforth et al. (2000), who indicated that individuals have their own preferences on the strength of their boundaries.

2.5.3 The Border-Crossers

The concept of a border-crosser is central to work-family border theory (Clark, 2000). Clark described 'border-crossers' as individuals who move between domains of work and family repeatedly while maintaining satisfaction in each domain and controlling the role conflict they confront to ensure balance. There are two different types of border-crossers depending on the degree to which they are central or peripheral participants in either domain. The central participation is defined in terms of two

elements; influence and identification. Individual's ability to influence is shown by their competency, relationship with other central members and internalize of the domain's culture and values, thus giving them authority to deal with changes to the domain and its border. Clark (2000) proposes that "if being a central participant gives a person more choices, then balance between work and home is more easily attained" (p. 759). The second element of central participations is identification with domain responsibilities. According to Clark (2000) "When individuals internalize domain values and when their identity is closely tied with their membership in the domain, their motivation to manage borders and domains increases" (p. 760). Furthermore, Clark posits that lacking identification with family and work may cause serious effects on balance between work and family such as lack of job identification, pressure to find meaning in marriage and others.

Previous research has reported on the effect of autonomy and identity in the work setting. Lambert, Kass, Piotrowski and Vodanovich (2006) and Chung and Van der Lippe (2018) found that one of the factors that influence work-family balance was having autonomy as well as flexibility at work, or being a central participant. Autonomy provide employees the right to schedule their own work. A similar result was also reported by Mas-Machuca, Berbegal-Mirabent and Alegre (2016) where increased autonomy at work leads to better work-family balance. It is apparent that central participants gain influence to negotiate and adjust the domain and its border which is easier for them to achieve balance.

On the contrary, peripheral border-crossers do not internalize the domain's characteristics, interaction is limited, and are less competent in their responsibilities. Thus, peripheral participants are unable to control their domains well and more likely to experience work-family conflict (Saungweme, 2010).

Clark (2000) recommended that movement between the domains of work and family often require individuals to adjust their goals and interpersonal styles to meet the demands of each of these settings. She added that an individual's experience of transitioning from work to other domains is affected by the nature of the border. Some individuals prefer to separate roles so that the border crossing can be reduced (Nippert-Eng, 1996). For instance, certain individuals create a separate email accounts for work and family, thus completing the work at the workplace and taking care of family issues during a break or non-work time. Others prefer to blend work and family roles altogether, such as when employees monitor emails from a client during off day from work rather than accumulating the emails to be read on a working day in the office. Therefore, the patterns of border crossing among individuals may vary in their preferences. The doctors who volunteer online are the border-crossers in this study.

2.5.4 The Border-Keepers and Other Important Domain Members

Domain members who have control in delineating the domains and members are categorized as border-keepers. In the workplace, the border-keepers may be the managers while at home the border-keepers may be the spouses. Apart from that, other domain members may be prominent in shaping the domain and border, yet they may not have the authority over the border-crossers. Border-keepers and other domain

members are important to help border-crossers manage the domains surrounding them by giving support to them. Clark (2000) highlighted that even border-keepers and border-crossers might have their own interpretation in guarding the domains and borders, which may lead to negative consequences. Hence, frequent communication between border-keepers and border-crosses may alleviate the conflict that arises. Border-keepers from other domain members (such as spouses, children, and supervisors) are not included as respondents in this study because it focuses on individuals, which is the doctor volunteer online. After all, in this study, the experience of domain members is interpreted from the viewpoint of a border-crosser.

2.6 Summary of the Chapter

This chapter discussed the literature on online volunteering in a virtual health community, work-family balance, and related issues. The discussion started with a general overview of a cyberspace and virtual community. Research related to a virtual health community and online volunteering were discussed too. From here, several gaps were identified in the literatures which are addressed in this study. Then, the discussion continued on studies on balancing work and family. Two theories i.e. Spillover and Segmentation that explain the interaction between work and family domains are elaborated in detail. Finally, the border theory which is the framework to be used in this study was elaborated. The next chapter explains how the study will be conducted.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The qualitative research approach was used in this study to understand the experiences of doctors who are volunteering online in the DB (DoktorBudak) virtual health community (VHC). This chapter begins by presenting the research paradigm and design. This chapter also describes the selection of the case study as a research strategy. The research designs covering an overview of the research participants and setting of the specific procedures for the recruitment of the informants, data collection, and data analysis are also discussed. In addition, approaches taken to ensure the quality and rigor of the research are also covered.

3.2 Research Paradigm

The term research paradigm was first used by an American philosopher, Thomas Kuhn in 1962 to represent a philosophical way of thinking (Kuhn, 2012). He then indicated that a research paradigm represents a broader perspective that is informed by solid principles, values and methods within which a research is carried out (Kuhn, 1977). On the same perspective, Guba and Lincoln (1994) as well as Denzin and Lincoln (2005) signified that the term as a belief or principle of a researcher in conducting research or investigation. A research should focus on certain fundamental philosophic beliefs to ensure its validity as well as the use of acceptable methods for the creation of a particular knowledge. It is indeed essential to recognize what these beliefs are in order to perform and assess any research. A paradigm therefore involves a standard,

structure and empirical process as well as scientific theories, principles and assumptions.

Research paradigm consists of three main components or elements; ontology, epistemology, and methodology (Guba & Lincoln, 1994). Each of these components are vital as it exemplifies basic assumptions, beliefs, norms, and values of a particular paradigm. Moreover, based on the relevant paradigm, a research will be guided by the respective assumptions, beliefs, norms, and values.

Ontology is the study or analysis of beings (Crotty, 1998). According to Kivunja, Ahmed and Kuyini (2017) ontology investigates the researcher's fundamental value system about the purpose of doing something. The focus of this component is on the determination of the truth or reality concerning an investigated phenomenon. This component is vital as it facilitates researchers in comprehending and taking a stand on their views of how things are actually happening. Moreover, accumulated data can be evaluated into a meaningful outcome.

Epistemology is concerned with the bases and forms of knowledge (Cohen, Manion, & Morrison, 2007). Epistemological beliefs refer to the development, acquisition and communication of knowledge. In other words, it is about knowing and understanding something. As for Guba and Lincoln (1994), epistemology is about the relationship between the desirable knowledge and what can be known. It is the analysis of truth, context, and methods in order to determine (i) what forms a knowledge argument, (ii) how information is acquired, and (iii) how the level of transferability of knowledge

can be measured (Kivunja, Ahmed, & Kuyini, 2017). Epistemology remains important as it has an impact on how researchers frame their study in the quest for truth.

Each of the above paradigm components focuses on its respective ontological and epistemological principles. Although all beliefs are assumptions, every paradigm's philosophical roots could never be confirmed or rejected empirically. Incredibly, different paradigms represent different ontological and epistemological viewpoints and thus vary from fact to knowledge that underpin their own particular approach to research. More specifically, the viewpoints are expressed according to their methods and methodologies.

Methodology refers to certain technique or actual plan following the collection and implementation of specific methods, whilst methods are techniques and strategies for gathering and analyzing data (Crotty, 1998). Methodology also raises the question on how a researcher find out what they think is known (Guba & Lincoln, 1994). This implies that methodology focuses on why, where, when and how data is gathered and analyzed. Thus, the data obtained can either be qualitative or quantitative. Kivunja et al. (2017) highlighted the connection between paradigm and methodology, whereby the methodological implications of paradigm selection encompass the research questions, participant recruitment, research instrument and sampling procedure, and data analysis.

In sum, Wynn and Williams (2012) and Kroeze (2011) suggest that in in social science research, epistemology is the central focus. Epistemology, therefore will guide this

study and facilitate in understanding the phenomenon of online volunteer doctors achieving work-family balance. Kroeze (2011) suggest that while epistemology assumptions is connected to ontological, it focuses on knowledge processes, specifically how societies comprehend and explain facets of truth, how they arrive at these perceptions, and what defines true knowledge. Several philosophical concepts, primarily in IS (information system) research, will be discussed in the next section.

3.2.1 Philosophical Paradigm in IS Research

Philosophical paradigms, also regarded as epistemology, are associated to the issue about what must be considered as suitable methods of acquiring knowledge as well as how can they be acquired (Bryman, 2008; Kivunja et al., 2017; Myers, 1997). According to Kroeze (2011), positivism, interpretivism, and critical theory are the three major epistemological used in IS.

For a better understanding of the first epistemology, the positivist, August Comte, who coined the philosophical ideas, claims that the best ways of understanding human are through observation. Positivists believe that truth is objectively understood and observable by means of criteria which independently rely on the researcher and his or her instruments. In this regard, Gregg, Kulkarni and Vinze (2001) pointed out that confirming or falsifying theories is a central concept of positivist epistemology. In order to improve accuracy in the definition of variables and the relationship between them, positive thinkers follow scientific methodology and standardize the knowledge creation process through quantification.

The interpretivism paradigm is the next epistemology. Interpretive underlying idea is to interpret the realm of human experience subjectively (Guba & Lincoln, 1994). This approach attempts to comprehend and understand what the individual is going through or the interpretation of the situation that he or she is creating. With regard to the same phenomenon, different people can create meaning differently and thus the social phenomenon could only be perceived from the point of view of individuals who engage in it (Crotty, 1998). Therefore, research conducted within this paradigm seeks to understand rather than to explain.

The third paradigm is critical theory. Critical theory is built on real-world phenomena and is related to social ideologies (Kroeze, 2011). The critical paradigm assumes that knowledge is socially created and informed by power dynamics within community. The goal is to publicly criticize the status quo, to emphasize on conflicts in modern life, and to attempt to bring about cultural, political and social shift that would address the cause of the issue (Mack, 2010).

From the discussion above, epistemology is necessary since it is central to how we perceive things. Guba (1990) suggest that it is important for a researcher to identify their epistemology because it will influence the nature of study which will be undertaken. The research's epistemology will be addressed in the next section.

3.2.2 Philosophical Approach for the Study

The epistemology behind the study are focused primarily on interpretivism. According to Wynn and Williams (2012), interpretivist approaches allow researchers to

understand the reality through the use of individuals' meanings, expectations and interpretations. Therefore, interpretive approach seeks to establish an interpretation of fact as well as the system in which the environment affects and is affected by information science (Walsham, 1993). This claim justifies the selection of an interpretive approach as the philosophical basis for this study. In the context of this study, deeper understandings of how individuals create their own knowledge shaped from their experience and the underlying interpretations of the process is necessary.

In this study, an understanding of how the online volunteer doctors thought about and interpreted their experiences in managing their work and family towards balance achievement was carried out via interpretivism. The provided feedback and shared of experiences by the doctor centered on the feelings as well as interpretative concerns raised by the interviewees who took part in the study. Data obtained from these doctors were the building blocks of what they and their groups did. Considering the interpretive approach taken in this study and the issues at hand, the researcher found that the case study approach is the most suitable research strategy as it provides beneficial exposures on specific individual informants' actual perceptions and thoughts in a real setting which might have been missed in quantitative methods. As a result, the interpretive position was chosen for this study.

3.3 Research Strategy

For this study, a qualitative approach has been chosen. Many academics believe that qualitative approach is the most effective way to understand people (Denzin & Lincoln, 1998; Domegan & Fleming, 2007; Hays & Singh, 2011; Hiltz & Goldman,

2004). Qualitative researchers explore the environment with the aim of becoming engaged and accepting individuals, groups, or societies in various settings. By consciously engaged, researchers have the opportunity to adapt to the individual phenomenon and bring new insights into their own ways of interpreting the informant, setting or phenomena of interest. The qualitative research appears to be exploratory in nature since the issues to be explored either have not been investigated or need to be studied from a new perspective (Hiltz & Goldman, 2004). By using qualitative as the strategy, this study explore the process of understanding how online volunteering doctors achieve work and family balance.

3.3.1 Case Study Research

Case study is among the various ways of conducting a research as it is intended to understand a person as a particular entity or group within a social context. Yin (2013) states that a case study research is used particularly to understand a social phenomenon where researchers are able to aim at a 'case' as well as maintaining a comprehensive and real-world view. The case study is not just an analysis of cases, but also a great way of describing cases and exploring an environment to understand them (Cousin, 2005). Gillham (2000) describes a case study as an inquiry to address particular research questions that seek multiple facts from different situations. The key characteristics of a case study refers to the ability of performing an investigation from diverse lenses by allowing the discovery and understanding of a phenomenon from several angles (Baxter & Jack, 2008).

Given the interpretative approach stated in the previous section and the nature of the research questions, the case study is considered as the most suitable approach to be applied in this study since it offers an understanding of a specific problem or issue in detail as well as a structured way of gathering data, analyzing information, and documenting the findings. The justification for selecting the case study research to perform the study is explained next.

First, according to Yin (2013), given the nature of the research question, a case study research is significant when the proposed research addresses either the “how” and “why” questions. A case study allows researcher to understand the dynamics of the processes especially when the phenomenon under study is wide and diverse (Kim, Price, & Lau, 2014). Thus, based on the subsequent explanations, the phenomenon regarding the online volunteering doctors can be regarded as wide and diverse:

i. Involve online and onsite volunteers

Doctors who volunteer online through this DB VHC usually connect to their readers (such as parents, caregivers or the public) through online channel. However, some of the times they are connected via onsite activities such as road tours, workshops, talks, and mainstream media (e.g., radio and television). The volunteer doctors are frequently involved in a number of online activities including sharing information, responding to questions, and posting articles on some topics of interest. The volunteering activities can be considered as a complex phenomenon because the

doctors are maintaining the relationship with their readers not only through online but also onsite.

ii. Uses various online platform

There are different online platforms that can be used in setting up the virtual health community activities. Doctors and the public can use one or more social media channels to interact with each other, either via DB website, Facebook or Twitter. The main channel of interaction, however, is through the DB website. Different channels would likely have a different effect on communication between the community members.

Second, Myers (2019) and Yin (2013) argue that a case study research strategy is intended to help researchers understand individuals and the case itself. Therefore, it is important to provide a comprehensive picture of the scene of online volunteer doctors from various angles in order to provide answers to the questions of whether online doctors are able to maintain a balanced between work and family life. This study make it possible to explore and reflect the complexities and variations of the world studied, especially when the boundaries are not clear between the phenomenon and context. The boundaries may be an activity, event, process, or individuals. The bounded system for this study is that doctors volunteer online through DB VHC. In this regard, the investigated phenomenon cannot be isolated from its context (for example, the hospitals where the doctors are working) and more specifically, the work-family environment, as it is the setting in which doctors experience the management of the

border between work and family domains. Moreover, the particular setting of medical doctors is quite challenging because the nature of medical doctors' work, which requires long working hours and the heavy workload is a problem for the doctors, as it takes time and effort. Based on previous studies, the Information and Communication Technology (ICT) tools used for online volunteering have also established more possibilities of conflicts between different roles through the increased of combined roles (Wet & Koekemoer, 2016). Therefore, in order to gain new knowledge of the selected individuals, the phenomenon needs to be extensively studied.

Third, Yin (2013) clarifies that a case study provides an attractive, special, or fresh topic with a detailed grasp of a social process, organization, or collective social unit. The characteristics of this study can be considered as ideal for conducting qualitative case study as the online phenomenon of voluntary services among doctors in Malaysia is new and unique especially when the DoktorBudak (DB) was first deemed as the most active among the virtual health communities. It is evidenced that there is a lack of research focusing on doctors as online volunteer or moderators in a virtual health community that attempt to achieve a balance life between work and family (Bodker, 2016; Schlachteret al., 2018). Hence, making this subject ideal for a case study analysis.

Finally, exploring the phenomenon of doctors volunteering online in their natural setting is one of the main characteristics of a case study research (Cresswell, 1994). This requires researchers going out to the study setting (e.g., hospital), getting

approval, and gathering data. The researchers therefore use the case study approach to establish the study based on the actual reality.

3.3.2 Single Case Study Design

A case study exists in various meanings and forms. It could also be either single or multiple due to a number of reasons. A single case study research is appropriate when a researcher decides to investigate one particular entity (e.g., individual from a particular group) or a single group (e.g., a group of individuals) characterized by the production of rich and detailed descriptions (Yin, 2013).

In contrast, a multiple case study design is more likely to compromise on some degree of details in each case as to allow comparisons through a variety of settings (Doolin, 1996). Most importantly, the multiple case designs are intended to compare the obtained results between other cases when similar outcomes are expected (literal replication) or for theoretical replication. For any conflicting outcomes in which the cases do not yield expected results, the original theory should be modified and reevaluated with another group of cases (Yin, 2013).

Based on the prior overview of the single and multiple case designs, it is more imperative for this study to opt for the single approach because it enables the analysis of a typical case that directly reflect the phenomenon of online volunteering doctors. Moreover, the focus of a case study does not only directed to what can be observed in a particular setting but also to enhance thorough understanding pertaining to the specific area of study (Tellis, 1997). The philosophy behind the single case study is

that it “not to prove but to improve” (Madaus, Stufflebeam, & Kellaghan, 2000). A single case study, therefore, represents a promising method for conducting research that examines the dynamic phenomena of online volunteering doctors in achieving work and family balance. In addition, Dyer and Wilkins (1991) describes that when researching a single case study, rich theoretical insights is not necessarily generated, and the researcher can criticize existing theoretical relationships and investigate new ones. From the above discussions, a single case study was used in this study. The phenomenon of the DoktorBudak virtual health community fits well into the category to be investigated as defined by the previous authors.

3.3.3 The Unit of Analysis

According to Stake (1995) and Yin (2013), a case study could be restricted by the following; (i) time, population and setting, (ii) form of empirical evidence to be collected, and (iii) approach to data collection and analysis. Furthermore, to control the number of related data for the collection and analysis purposes, a case is characterized by a unit of analysis with the aim to focus on the proposed case. A unit of analysis defines what the case is and is related to the research questions (Yin, 2013). Hence, in this study, the unit of analysis centers on the virtual health community, whilst the cases of analysis are the DoktorBudak virtual health community members who participated as online volunteers.

3.4 Research Process

The research process depicted in Figure 3.1 illustrates the phases and processes involved as well as the outcomes of each phase. This study was conducted in three phases. In the first phase, a theoretical study was carried out by reviewing and analyzing related literatures (e.g., journal articles, proceeding papers, books, unpublished thesis etc.) with the intention to identify the issues and gaps related to the domain of this study. The reviews and analyses basically looked into the concept of virtual community, online volunteering, and work-family issues. In addition, relating to the online volunteering issues, problems in offline and online volunteering among paid workers (particularly among doctors) as well as the practices of the work-family balance of online and offline volunteers were also studied. Since studies on online volunteers are scant, literatures on offline volunteers were reviewed to identify work-family balance related issues and theories. The sample of informants was taken after the researcher performed the preliminary survey with DoktorBudak founder and co-founder by providing details that fulfill the criteria as online volunteer doctors.

The second phase of the study comprised of the following processes: (1) justification for the single case study, (2) data collection procedures and (4) data analysis. The rationale for selecting a single case study was discussed in section 3.3.1. The questionnaire was developed based on a careful review of previous literatures. The data in this study were gathered using in-depth semi-structured interviews (details in section 3.5.1) involving 17 doctors, aged between 33-56 years, who participated actively as online volunteers in the DoktorBudak Virtual health community. The

period of data collection ended over 11 months since the process of getting them to be interviewed took a long time due to doctors' busy schedules.

A content analysis (from DB Facebook page and newspapers online articles) was also carried out to support the data from the interviews (sub-section 3.5.2). Moreover, the purpose for the different approach used is to triangulate interviews with content analysis to increase the trustworthiness of the study findings. The details about data analysis are presented in sections 3.6. At the end of this phase, the validity of the case study was established by the two testing procedures intended for a single case study; construct validity and reliability.

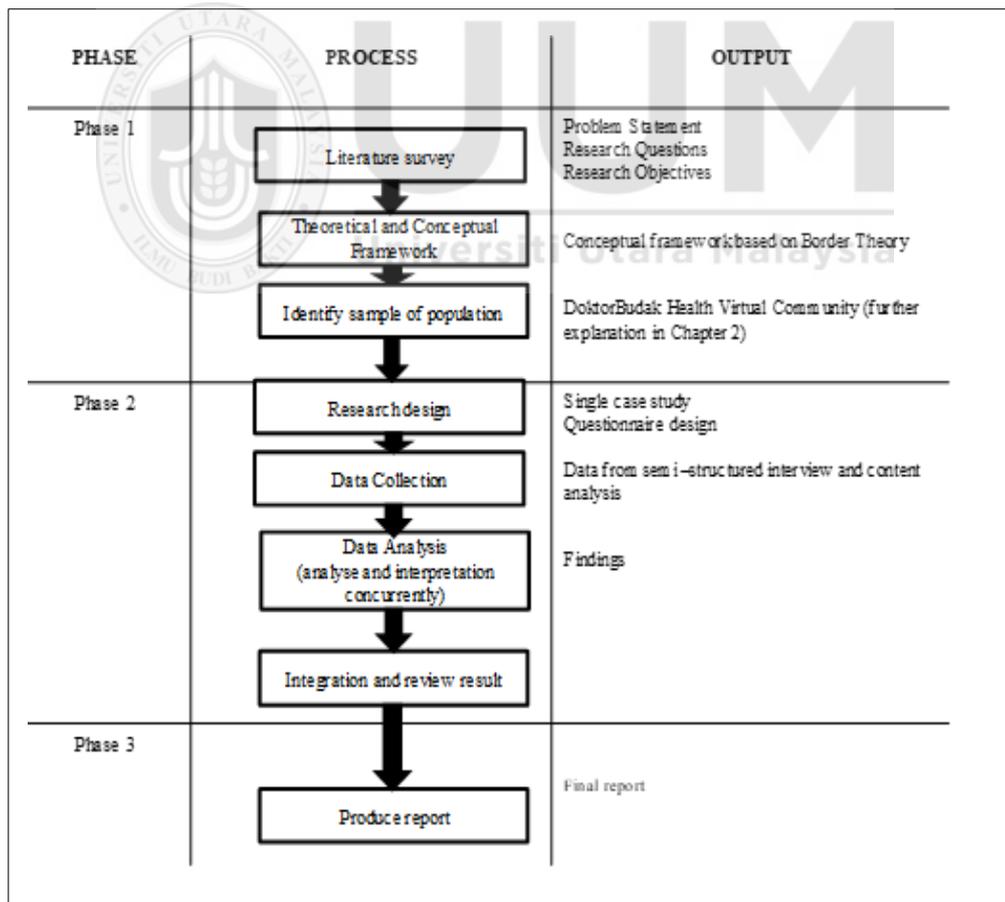


Figure 3.1. Research Process

The final phase is the writing of report to present the findings from the study. The objective of producing a report does not primarily emphasize on the description of data, but also on the “social construction” where the researcher offers direct perspective of the informant lives (Kvale, 1996). In this case, the researcher would be the one who will be interpreting the responses provided by all the informants in order to understand the phenomenon being studied.

3.4.1 Conceptual Framework

The work-family theories reviewed in Chapter Two are used to guide this study as its conceptual framework. Clark’s (2000) framework was selected as it is found to be ideal in terms of these three standpoints; (i) setting out the scope of existing literatures on work-family issues, (ii) understanding the phenomenon of doctor volunteering online in managing the borders between work and family; and (iii) determining the understanding of other researchers in studying this phenomenon. Three justifications are also included in details on the need of proposing the conceptual framework.

First, there is growing interest in recent studies on how people handle their work and family lives and how they achieve balance (Adisa, Gbadamosi, & Osabutey, 2017; Hirschi, Shockley, & Zacher, 2019; Rahman et al., 2017). The current research has generally proposed that the WFB studies only focused on the work and family as part of the balance process (Keeney et al., 2013; Kelliher, Richardson, & Boiarintseva, 2019). Clark (2002) suggested a similar idea in setting out the theoretical framework for this study, arguing that achieving work-family balance was restricted to two domains; work and family. Many scholars, however, believe that the WFB concepts

can be expanded to include other areas of life, such as volunteering (Casper et. al., 2018; Haar, Russo, Sune, & Ollier-Malaterre, 2014; Powell et al., 2019). The demand for an expansion of the concept is often connected to the ICT advancement (e.g., the widespread use of social media) as well as the noticeable trends in workplace (e.g., the growing participation of women in the workplace, the juggling of work and family roles for dual-earner parents) which has made the employees to accept non-work domains alongside work and family domains. This scenario has emphasized the importance of one of WFB's most notable features. The importance placed on multiple life roles differs between individual to individual (Casper et. al., 2017). Although the family role is important in non-working life, Gragnano, Simbula, and Miglioretti (2020) emphasized the importance of other roles when addressing and assessing the WFB. Thus, non-work domains must be taken into account in order to better understand the dynamics that affect work–family balance which could have different impacts when determining work–family balance (Keeney et al., 2013) particularly among doctors. In contrast to the Clarks' (2000) viewpoint on the work-family issue, online volunteer roles in non-work domains would provide another new angle on the domains engaged by online volunteer doctors.

Second, since the introduction of work-family border theory, the emergence of ICT has drastically changed the work-life structure. Work can now be conducted at any time and from any place, which implies that work and family domains appear to be merged and borders between work and family are hardly exist. While technology supports the achievement of a certain level of work-life balance (Kreiner, Hollensbe, & Sheep, 2009), many researchers believe that constant availability can blur the

boundaries between work and family life. According to Bodker (2016), Burney (2019), Kossek (2016) and Schlachter et. al. (2018), when the emerging technology keep us more connected than ever, the distinction between work and family is blurred. In a mixed method study, Burney (2019) explained on the delineation of possible borders by employees with regard to work-life balance and the smartphone used. She claimed that smartphone use has blurred the lines between private and work-family life. The findings were similar to those of (Adisa, Gbadamosi, & Osabutey, 2017), in that mobile technology enabled employees to be more flexible thereby prevent them from stop working. While ICT advancements allow for greater flexibility in terms of place and time as well as enabling borders to become more permeable and blend, they can have a negative effect on work-life balance. In contrast to Clark's (2000) work-family border theory, which focuses on the physical border's characteristics (e.g., flexibility, permeability, and blending), the upcoming challenges of how employees manage the border while volunteering online are more difficult and demanding. This seems to be owing to the online environment's flexible and permeable virtual borders. (Bodker, 2016). As employees volunteer online, they are blending the virtual and physical borders, resulting in unclear border spaces which could contribute to more conflict (Jimenez, Orenes, & Puente, 2010).

Unfortunately, none explored on the interaction between full-time online volunteer employees in achieving work-family balance. Therefore, there is a need to investigate the attainment of work-family balance particularly among online volunteering doctors since most employees are having difficulties in maintaining a distinction between work-family. Thus, the border theory should be reassessed in the context of work-

family interface relationship for individuals participating online (Field & Chan, 2018; Garvey, 2009). More specifically, Field and Chan (2018) argued that the concept of borders and domains around the life of individuals as put forward by Clark (2000) may be more complex, especially for individuals who participate online, and therefore suggests the need to develop a new form of border theory. This study looked at how employees who volunteer online navigate the border in order to achieve a sense of balance in their lives, centered on Clark's (2000) three border characteristics (e.g., flexibility, permeability, and blending).

Third, the idea of online volunteering has completely transformed how people perceive and interact with the physical world (Clark, 2010). Nansen et al. (2010) provide more details concerning 'virtual' volunteering these days, discussing how employees have been removed from traditional time and space constraints. As a result, online volunteer doctors have embedded cyberspace into the physical world. Because of its asynchronous nature, the embedded world, according to Cecchinato (2018) and Kossek (2016), presents new challenges for individuals in defining acceptable borders between the two worlds. This study aims to elaborate the concept of domains as suggested by Field and Chan (2018) in order to extend Clark's (2000) work-family border theory and experience of those employees volunteering online. Apart from work and family domains, the cyber domain is considered one of the domains in this study. Overall, the aim of this study is to explore into the effects of cyberspace on these three topics: (i) the traditional way of handling work and family, (ii) the roles performed by individuals in different domains of life, and (iii) the structure of work and family borders.

Based on the above, a conceptual framework was proposed that focuses on individuals who engage in online volunteer work and seek to balance work and family life. Interestingly, the cyber domain encompasses a broader concept of other domains/elements that surround the doctors' lives. The main difference between the proposed and Clark frameworks is in the areas that have an impact on individuals which are not limited to work and family domains, as Clark suggests (2000). As a result, cyberspace was introduced as a new domain that served as a basis for the establishment of a virtual health community. Figure 3.2 depicts the new domain's integration into the framework.

In Figure 3.2, the dashed lines of the cyber domain signify the working environment that resembles an actual space. The cyber domain, on the other hand, is not like a three-dimensional physical environment (Galik & Tolnaiova, 2019). Galik and Tolnaiova (2019) suggest that the cyber domain can be established using communication technology, especially the Internet, and that it encompasses a lot more than that. In the previous chapter of Section 2.2.1, the justification and explanation for cyberspace are clearly outlined.

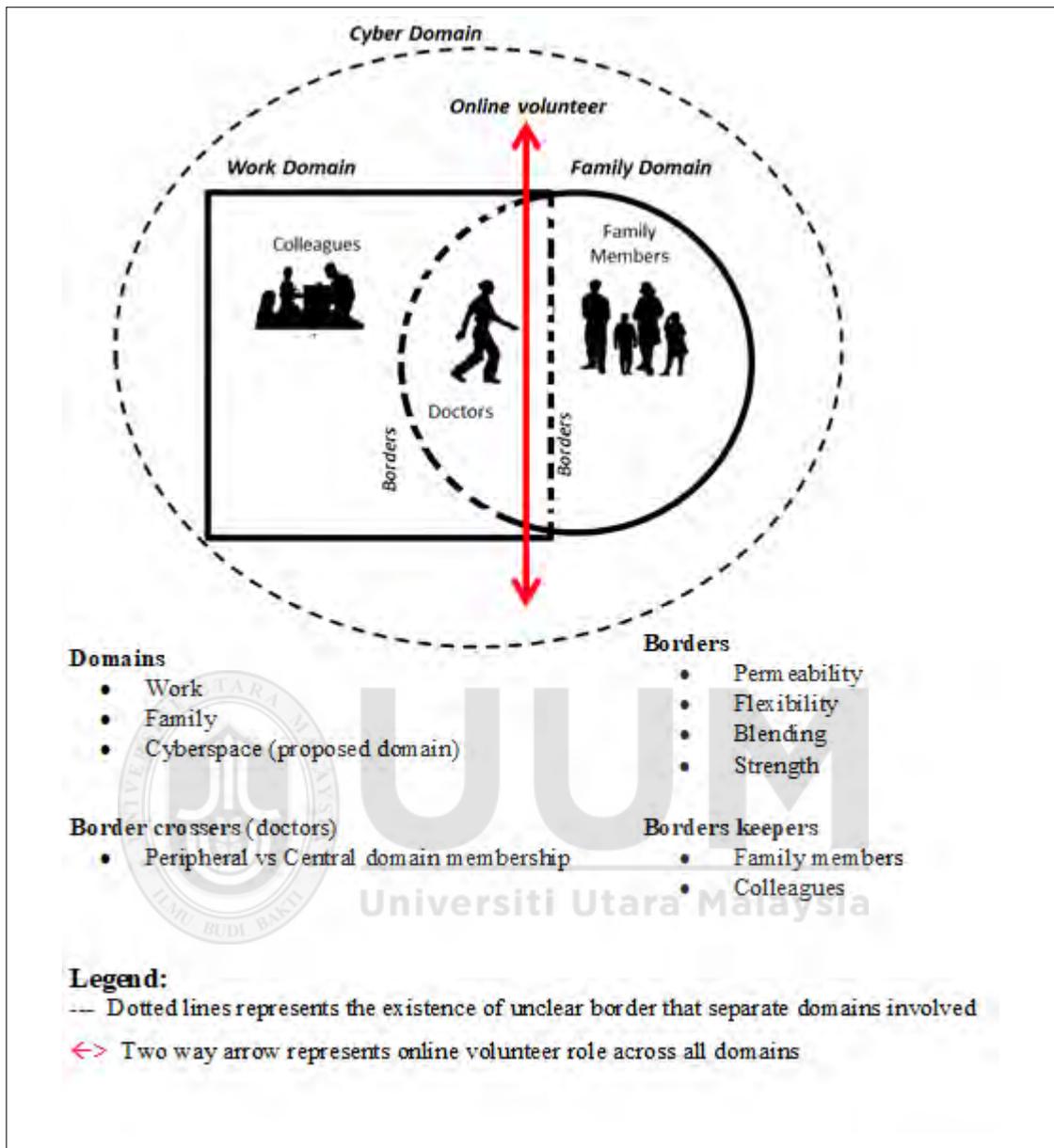


Figure 3.2 Conceptual Framework of the Work-Family Balance of Online Volunteered Doctors

Since the objective of this study is to identify the role of online volunteer doctors in balancing work and family, the emphasis is not just on the "work" and "family" domains and the boundaries between those domains as indicated by Clark (2000) in her theory. Clark (2000) mentioned specifically the need to include other related domains in addition to work and family in her original definition of border

permeability. These facts support the identification of cyberspace as a new domain because, by continuously engaging online (as seen in Figure 3.2 by the two-way arrow), volunteer doctors have identified themselves in a non-traditional physical domain and created a more dynamic environment in which the lines between the physical and virtual worlds are blurred. Furthermore, as doctors cross the border, it would be interesting to learn more about the online volunteer phenomenon that causes them to function as either a central or peripheral participant in domains.

Since work-family balance can be achieved through border crossing negotiations (Clark, 2000), the cyber domain interaction that takes place in real time has a direct effect on the cultural and social life of individuals (Siegert & Lowstedt, 2019). This brings major challenges to both the individual and the organization. They need to have experience in how to handle the various characteristics of the borders around them, including flexibility, permeability, and blending, which will collectively determine the strength of a border and in particular, affect work-family balance (Clark, 2000). This also explains the importance of examining the strategies used by online volunteer doctors in attaining work and family balance in a VHC as the second objective. As most of the previous researches related online participation among doctors only focuses on the following aspects such as motivations (Cox et al., 2018; Kim et al., 2019; Naqshbandi et al., 2020; Shang, Zuo, Ma, & Yu, 2019), role of volunteer (Chung, Im, & Kim, 2020; Pickell, Gu, & Williams, 2020), challenges and opportunities (Seddighi et al., 2020), retention (Cox et al., 2017), this study looked into how well these doctors navigate and organize their work and family life in searching for balance.

The main focus of this study, however will be primarily on the doctors themselves and not on other domain members (known as border keepers), such as family members or colleagues. As suggested by Kim et al. (2019), the nature of the doctor's profession has brought problems of work-life balance to doctors, more to integrate additional roles in their lives. It is therefore important to understand how doctors can handle and maintain a balanced life while volunteers online.

3.4.2 Samples and Recruitment

As this study adopted a qualitative approach, the non-probability sampling was employed involving the purposive and snowball techniques. The purposive sampling was applied to gather initial responses, whereby the founder and co-founder of the DB VHC were recruited as potential informants based on specified criteria. Snowball sampling was then employed to identify other suitable informants, who were recommended or referred by the existing interviewees. This method consists of at least two steps: (1) researcher recruits the founder and the co-founder of DB VHC to act as the liaisons and (2) these liaison doctors who have personal contact with the 'known' doctors in the VHC recruited others to participate. The criteria for participation in the study are discussed below. The sample comprised of a group of online volunteering Malaysian doctors of the DoktorBudak VHC.

In accordance with the aim of the study, three criteria were considered for the recruitment of informants. The first criterion concerned informants' clinical experience, whereby only doctors with a minimum of five years' clinical experiences were approached. The five years period indicates that a doctor is recognized as an

expert practitioner (Benner, Tanner, & Chesla, 2009). By interviewing an expert, more knowledge can be shared by those experienced doctors. Thus, this study sets the minimum of five years' clinical experience for the informants to ensure that they had appropriate experience. The second criterion concerned doctors' participation with DoktorBudak VHC and thus only doctors who had actively engaged with DB for at least three years were recruited. This minimum requirement was specified to ensure that the participated doctors are able to accurately evaluate their experience involving in the VHC. At the same time to assess the use of social media tools to interact with patients as well as to juggle between works and other life commitments. The final criterion was to select only married doctors because they are the individuals who usually juggled their work and family life. This criterion was intentionally set up to uncover the successfulness of the doctors in keeping the balance between their life and other multiple roles.

In a qualitative study, there are no fixed rules about the actual sample size required for data collection because the interested is not in generalizing the results. Most importantly, is to obtain adequate number of informants to guarantee the validity and generalization of findings from semi-structured interviews. For a case study, the appropriate number of interviewees depends on the size of the unit of analysis (e.g., organization or department), and some other important factors such as the phenomenon under investigation, scope of the study, and available timeframe (Pan & Tan, 2011). Generally, a reasonable sample size for a case study is fifteen whilst anything less than that is considered inadequate (Baskarada, 2014; Pan & Tan, 2011).

For this study, the data saturation point was achieved after seventeen interviews. Analysis of the data was repeated until no new themes emerged. Although the number of informants was typically small, researcher stopped selecting new informants as there is no new information emerged. This is why a qualitative researcher rarely decides their sample size prior to their study and not limiting the number of the chosen participants until the data have achieved a saturation point (Glesne, 2010).

3.4.3 Case Study Protocol

A case study protocol is an imperative procedure approach for at least two stages, for example, a preliminary and final. According to Yin (2013), having a case study protocol is necessary for a multiple-case study. However, for a single-case study it may increase the reliability of the case study research. Hence, prior to starting the actual data collection, a case study protocol as shown in Table 3.1 was developed based on Yin's (2013) approach. The following four sections present the discussion of the protocol: (1) overview the case study, (2) data collection procedures, (3) case study analysis, and (4) reporting.

Table 3.1

Case Study Protocol (CSP)

Part	Content	Activities
1	Overview of case study <ul style="list-style-type: none"> • Case study design • Case study questions • Case study protocol development 	The case study questions were formulated based on the following issues: <ol style="list-style-type: none"> 1. Doctors volunteering online face difficulties in managing the border between work and family

		2. Studies on work-family among doctors volunteering online are limited.
2	Data collection procedures <ul style="list-style-type: none"> • Identification and case study selection • Data collection plan 	<ul style="list-style-type: none"> - Select a single case study among doctors volunteering online in a virtual health community - Data collection plan: <ol style="list-style-type: none"> 1. Initial contact with the organization 2. Draft and submit an official letter 3. Arrange field visits and interviews 4. Data collection – Semi-structured interviews 5. Data collection – Document reviews 6. Data collection – Observe messages from social media tools - Instrument <ol style="list-style-type: none"> 1. Tape recorder
3	Analysis <ul style="list-style-type: none"> • Identify the criteria for interpreting case study findings • Plan validity 	<ul style="list-style-type: none"> - Thematic data analysis and content analysis was used as the data analysis technique - Categories of themes emerge from the research were identified - Construct validity (triangulation), reliability (CSP)
4	Reporting	<ul style="list-style-type: none"> - Findings - Report / summary

a. Part One: Case Study Overview

The overview of the case study include issues related to its design, questions and propositions, and protocol. In this study, a single case study involving a group of doctors who volunteer online in a virtual health community is used. The doctors' involvement as online volunteers in the community has triggered the researcher's interest to understand how they juggle between work and family. The doctors volunteering online comprised of individuals from different backgrounds with respect to race and religion. Nonetheless, they work together to benefit the online community

by utilizing the ICT applications at work or at home. The volunteer doctors are the object of interest as DoktorBudak.com is one of the most active health virtual communities in Malaysia. Moreover, it is among the first virtual health communities developed in Malaysia. The research questions of this study seek to identify the role of online volunteering doctors embraced in attaining work and family balance as well as the strategies used in managing the border between work and family. A case study protocol was developed at this early stage to guide the researcher throughout the research process.

Data were gathered through semi-structured interviews, carried out over 11 months. Prior to the field work, the semi-structured interview questions were reviewed by both supervisors to make sure that each item was addressed based on the research question. At this stage, due to the leading question, one question was amended accordingly.

In order to test the suitability of the questions, pilot interview was conducted with small group of members from the DoktorBudak virtual health community, the founder and co-founder of the virtual community. The pilot interview was performed to address any problems that could lead to misunderstandings on the posted questions. One of them was the issue on the number of interview questions. An appropriate number of questions is important to avoid spending long hours in the interview session, in which the informants may get annoyed and bored. Therefore, based on the pilot study, the questionnaire was improved, particularly by modifying or rephrasing repeated questions. By utilizing the semi-structured interviews, several probing questions were asked to delve deeper into the interviewee's answers.

b. Part Two: Data Collection Procedures

In the data collection procedures, the selection of a case study and data collection plan were performed. As mentioned before, this study involved a single case study of doctors volunteering online in a virtual health community. For data collection, the researcher contacted the key informants in the community, arranged, and specified the procedure to be followed. The key members of the DoktorBudak VHC was contacted to get permission for conducting a case study about them and setting a meeting. Prior to meeting them, a consent form were sent to the key members of the community for inviting them to participate and notifying on the conditions set in the study. Data were gathered from multiple sources of data through interviews, document reviews, and messages (e.g., posts, comments and messages) from the social media tools (the Facebook). The use of multiple sources of data allows the researcher to gather various historical, attitudinal, and behavioral issues. In addition, the multiple sources of data served as evidences in the development of converging lines of inquiry, known as triangulation (Yin, 2013). Eventually, the findings are expected to be more credible and precise (Patton, 2015; Yin, 2013).

c. Part Three: Case Analysis

Part three discusses on the case analysis procedures once the data have been collected. During the data analysis process, a list of themes or issues were established. The thematic analysis was employed as the data analysis technique that requires the interpretation of the meaning of the informants' experiences. The validity and

reliability of this study were carried out using the multiple sources of evidence Case Study Protocol (CSP).

d. Part Four: Reporting

The final section of the case study protocol presents the results and offers some recommendations based on the findings.

3.5 Data Collection

In this study, two different sources of data were used; semi-structured interview and document analysis. The semi-structured interview was the main source of data collection. The document analysis was accomplished by observing and reviewing the messages delivered in the social media platform.

3.5.1 Semi-Structured Interview

The primary technique of data collection method was the in-depth interview, in particular, the semi-structured interview. Besides face-to-face communication, the interview was also performed via Skype, telephone and email. As the current study is an exploratory in nature, the semi-structured interview is relevant and well suited especially in providing the opportunity to seek detailed and comprehensive explanations from the interviewees regarding their opinions and experiences (Saunders, Lewis, & Thornhill, 2009). In addition, it provides a combination of objectivity and complexity understandings which cannot be attained through other means of data collection such as open-ended questionnaires. The interview also offers both the researcher and informants the freedom to explain and clarify their experiences

in managing the border between work and family as well as the opportunity to comprehend how they view the decision they make.

Moreover, a semi-structured interview is suitable for conditions where the researcher does not have many chance to have a one-to-one conversation with the informants (McGrath, Palmgren, & Liljedahl, 2019). It was quite a challenge to get the samples of this study, who are doctors with hectic schedule, to participate in a non-medical study. Thus, the semi-structured interview was selected for the data collection.

3.5.1.1 Interview Protocol

In the interview protocol, the common subjects of interest was specified in advance to ensure that comparable data are collected from all informants (Sternberg et al., 2002). The questions in the interview protocol were adapted from previous related studies such as those on work-family management, work-related technology use and volunteering work by Clark (2000), Erden, Von Krogh and Kim (2012), Janet (2000), Nippert-Eng (2008), Othman (2013) and Ramos et al. (2015).

As shown in the interview protocol (see Appendix B), the interview questions were divided into five main parts. The first part of the protocol consisted of introductory questions to confirm that the informants met the criteria that had already been defined for participating in the study. These questions were about the demographic of informants, which include name, marital status, occupations, organization, phone number and e-mail address. The second part were additional questions mainly for informants to provide brief information related to their work and family. The

information required on work were those relating to the length of employment, working hours, and flexibility of working hours, while those on family included details of family members, type of home chores and importance of having free time.

The third part of the questions comprised of open-ended questions for the informants to reveal about their involvement, passion, and reasons for being online volunteers in a virtual health community. These questions served as an overview for researcher to ask further information about the way they manage their work and family while volunteering online.

The fourth part aimed to understand the management of the border between work and family activities among the informants as they volunteer online. These questions focused on the border characteristics used by the informants. Previous questions were prepared to see whether there are connections between the reasons of the informants volunteering online and their ability to handle their work and family, and whether their decision to volunteer influence the way they manage their work and family domains.

The fifth part was about the challenges that informants experienced in managing their work and family while volunteering online. These questions were designed to reveal whether there are any other problems or issues encountered by informant as they volunteer online. Finally, the interview questions were concluded by asking informants to share the challenges in using the ICT to accommodate both work and family activities.

The interview was conducted in the language that the informant is most comfortable with i.e. English or Malay. Following the suggestion of Darke, Shanks and Broadbent (1998), the researcher recorded the interview with the permission of the informant.

3.5.1.2 Conducting the Interviews

Since the study informants were available and accessible in different ways, a combination of interview approaches was used. Most communication in the study took place by email (10 out of 17), telephone (4 out of 17), via Skype (1 out of 17) and two of the interviews were conducted face-to-face. A more personal approach with all informants were not possible due to schedule difficulties and resource constraints (e.g., large geographic area). Overall, researcher managed to interview seventeen informants between February 2017 and December 2017.

For the purpose of data collection, first, researcher conducted a brief discussion with the co-founder of the DB VHC by telephone before the main interview. This pre-interview with the co-founder was arranged to identify the informants' readiness to participate, study the sample selection criteria and explain the purposes for conducting the study. After the discussion, the co-founder sent out a news blast about the study to all members in the DB WhatsApp group. Then, a number of purposefully suggested informants were contacted using personalized invitation through WhatsApp and e-mails. The two mediums were also used for conveying the aim of the study and further information on the upcoming interview (i.e. interview session and method).

For informants who are interested to take part, they were then asked to sign the attached consent form (Appendix A). However, the interview questions were only be sent to them during the scheduled interview session. This is to ensure that the informants can deliver spontaneous and sincere answers. Some of the overlapping questions were intentionally included to make sure that the informants stick to their views. Once, the consent form was endorsed, a follow-up will be sent to the WhatsApp group to provide the appropriate date, time, and method of conducting the interview.

The face-to-face and Skype interviews were conducted in a neutral setting which was convenient for the informants, such as at the informant's workplace or home. Each of the interview session began by a short briefing regarding the purpose of the study, process of interviewing, audio-taping of the interview, rights to participate and confidentiality assurance.

Before signing the consent form, the informants may ask any questions relating to the study. After signing the consent form, the informants will receive a copy of the form and the interview is set to begin. The interview sessions, which took around 60 to 90 minutes, were conducted either in English or Bahasa Melayu or bilingual. Each of the session were recorded using a digital voice recorder. Two of the interview session were conducted face-to-face. One was interviewed through Skype due to their busy schedule and distance location. Another four interview were done through phone call, in which one of them chose to do it while driving back home as it was the best time to accommodate. Unfortunately, the interview had to be completed in two session because of the lack of time in answering all questions. To make matter worst, the

second session were scheduled after two weeks because of his/her busy schedule. The remaining informants (10 out of 17) responded via e-mail.

Moreover, some of the interview sessions were disrupted by phone calls or unexpected patient meetings. In certain cases, some of the interview questions had to be excluded considering the situation of the informant. For example, one of the question in part four of the interview protocol “Are there any special arrangements or strategies that you have not mentioned yet that enable you to balance your work and family life?” was skipped because the comparable question can be found in other questions such as “What tactics do you use to maintain this separation?”. In the interview, researcher used probing questions to clarify the informant answers. The researcher also took quick notes for each interview. In addition, the surrounding atmosphere were observed for supplementary information.

After each of the sessions, the informants were debriefed on matters regarding the purpose of the study and their feelings while participating in the interview. A token of appreciation were also given to acknowledge their voluntary contributions. Having completed a session, the researcher immediately transcribed a verbatim of each audio recorded interview. After reading the transcription, the audio were edited and if there were any unclear or new issue came up, the researcher will use it as a probing question to be asked in the next interview. The follow-up discussions were communicated via telephone call, WhatsApp or electronic mail according to the interviewee’s preference.

3.5.1.3 Limitation of using a Semi-structured Interviews

One of the main challenges while conducting the semi-structured interview process was associated with the recruitment of the informants, as doctors are usually busy and occupied with their work schedules. Nevertheless, this challenge was successfully overcome and improved through the use of messaging application such as WhatsApp and snowball sampling technique. In spite of this, the recruitment process was quite time-consuming and the appointment for an interview needed to be rescheduled many times before the interview can take place. For example, some informants were not able to spend more than an hour for the interview, and thus the researcher needed to manage time effectively to get comprehensive information.

In spite of these limitations, the semi-structured, and in-depth interviews enabled deep exploration of informants' experiences in managing a balance life between their work and family while volunteering online. The use of open-ended questions followed by probing and follow-up questions allowed for richer data to be obtained and a better understanding of the phenomenon.

3.5.2 Content Analysis

Content analysis is a method conducted to analyze documents, texts, and other various media (Bryman, 2008). Besides published material, artworks, photos, diagrams, sounds, symbols, icons and perhaps even statistical records could also be used as material for content analysis (Krippendorff, 2004). Content analysis considers an amount of qualitative material and seeks to identify basic common threads and meanings which represented patterns or themes (Patton, 2015). The process of patterns

and themes seeking is also known as pattern analysis or theme analysis. The term "pattern" refers to a descriptive finding, whilst "theme" is described in a much more categorical way.

In this study, the content analysis was conducted by reviewing and analyzing, (i) the communicative trends that took place on the DB Facebook pages, and (ii) several online daily newspapers and government official documents. The analyses followed the theme analysis procedure by highlighting on the identified respective subjects or topics based on the number of quotes observed the DB Facebook Pages and articles. The researcher preferred to use the term "category" in this chapter. The results from the analysis were then correlated to the responses of the interviews to address the research questions. The content analysis is used to support the interview, especially for the purpose of triangulation.

A. DoktorBudak (DB) Facebook page

The usage of social media platform such as Facebook (FB) as a data collection method has been found to be useful because the social media platform contains authentic descriptions of people's experiences (Baker, 2013; Barnes, 2014). Even though Facebook status update did not provide a complete understanding of the online world of the informants, several authors (Barnes, 2014; Rife et al., 2016; Schneider & Harknett, 2019) insist that the update offers researcher with some informal learning regarding the informant's world and a viable approach over conventional methods. Most importantly, the Facebook status allows researcher to accumulate more

information based on the number of discussions among the DB team members that took place twenty-four seven.

Researcher informed the founder to get consent to collect data from the Facebook earlier before starting the interview session so that researcher could have sufficient time to understand the informant's experience being an online volunteering doctor. The collected data and information were used to elucidate further the meaning of the informants' responses. Since DB Facebook page is public, researcher was able to view the Facebook data without any restriction.

The timeline for this analysis was between July 2016 and December 2017. Status updates, posts, and comments on the DB Facebook wall were reviewed for the content analysis. A total of 83 postings and 843 comments were included in the study. Users interacted on the DB Facebook page in two ways: first, the DB administrator could write on the wall; and second, the public could respond or provide comments to the DB Facebook page administrator's postings. Every posting in this study was categorized based on the suggestion made by Luarn et.al (2015), where the content of social media was classified into four main types: informational, social, entertainment, and remuneration.

Informational posts are intended to provide users with useful information while also encouraging interaction. A posting in this category may be where the administrator publishes new articles or other health-related material. This category also included

posts by the DB administrator about the television or radio broadcast talk show invitation.

Social posts are primarily intended to increase user engagement by inviting users to a particular event that has been shared by administrator. Postings provides sufficient meaning for obtaining user feedback on a topic. An online or offline health event that invites followers to participate is an example of a post in this category. The majority of the social media posts on the DB Facebook page is in the form of posters and videos.

Entertainment posts aim to impress social media followers in order to establish a connection with them through likes, shares, and comments. In other words, the higher the amount of entertaining content, as compared to posts with no entertainment elements, the more likely a brand would be revisited.

Remuneration posts contain discounts, special offers and promotional offers. The aim of this type of content is to support the image of a brand and its products/services. To analyze the observation of Facebook pages, a standard content analysis table was created (Table 3.2).

Table 3.2:

Coding Sample

Example of postings from DB Facebook page	Coding	Description
<i>Artikel baru - masalah diabetes di kalangan kanak-kanak (oleh dr. Shafina, pakar endokrinologi pediatrik)</i> Posted on May 17, 2017	Informational	Postings that are specifically intended to provide users with information
<i>Dr. Syariz Izry Sehat, pakar perunding pembedahan kanak-kanak akan bersama anda di Nasi Lemak Kopi O TV9 esok pagi dengan topik 'Pembedahan laparoskopik untuk kanak-kanak'</i> Posted on November 10, 2016	Informational	“
<i>Datang beramai-ramai di AEON Shah Alam 30/9/2017 jam 5 petang untuk sesi demonstrasi "CPR technique"</i> Posted on September 26, 2017	Social	Postings that are mainly aimed at encouraging user engagement, normally by inviting users to attend a particular event that has been posted by admin
A great, great event this coming November organized by Pusat Perubatan Universiti Malaya. Checkout the pics below and register!! Posted on October 16, 2017	Social	
<i>Peluang untuk menyertai playgroup! Pendaftaran dibuka.</i> Posted on September 12, 2017	Social	““

Other than categorizing postings by admin Facebook pages, the number of ‘Like’ button used by user was also observed. Between July 2016 and December 2016, there were 4766 "Like" on all admin posts, while 4493 "Like" were provided between January and November 2017. By using the ‘Like’ button, the user can demonstrate their support of the released postings without simply needing to write a comment. Everybody can see how users ‘like’ the Facebook postings. The researcher cannot however, provide the details of who posted the postings, as the Facebook page

administrator could be any member of the DB team. Somehow, researcher was able to observe many interactions from the DB Facebook page.

Researcher was also able to spot information such as offline events organized or participated by the DB team members, most of whom engaged in active television shows such as *Nasi Lemak Kopi O* (TV9), *Tanya Doktor* (Astro Ria and Astro Awani Pagi) slots including the IKIM.fm radio station slot and other offline community programmes. The information observed provides more insights pertaining to the ways that informants communicate and environment they are interacting with (e.g., virtual or physical world). This allows a better understanding on the interactions that exist in both spaces.

B. Online Daily Newspapers and Government Official Documents

Several online daily newspapers and government official documents (i.e. published by Ministry of Health (MOH), Malaysian Medical Council (MMC) and Public Service Department (JPA) were among the documents used for content analysis. These documents were analyzed and reviewed since ‘documents of all types can help a researcher to uncover meaning, develop understanding, and discover insights relevant to the research problem’ (Merriam, 1988, p. 118). The online newspapers were chosen to obtain deeper understandings of the underlying subject particularly relating to the doctors' work-family balance issues in Malaysia. The improvement on the balancing issues can be achieved by analyzing and reviewing a number of government official documents that include information on government programmes or initiatives. For example, in some of the documents, although doctors have been portrayed as a well-

respected profession, they also need to negotiate a series of obstacles in their daily lives, varying from billing issues to burnout.

Respective categories were inductively established based on the detailed analysis of the raw data from the collected documents. The inductive approach is appropriate when previous knowledge about certain phenomenon (Elo & Kyngas, 2008). The analysis involved three main daily online newspapers namely “The Star”, “New Straits Times” and “Malays Mail”. These newspapers were chosen based on their availability in Internet and coverage on a range of topics, including work-family balance and government policy related to doctors. Here is brief information on the selected newspapers.

- I. “The Star” is an English-language newspaper in Malaysia, established in 1971.
- II. “The New Straits Times” (NST) is a daily tabloid newspaper, founded in 1845.
- III. “The Malays Mail” is a daily edition that focuses on local events and has proven to be a success for independent news seekers.

All articles were taken from the newspapers' websites. Relevant documents were able to be located using the website's "search" feature. Unfortunately, the search narrow could not be narrowed down. For example, when the phrase 'work life balance' was entered in the web search area to identify the appropriate content, the researcher had to go through all the articles listed in the search field. In addition, due to the vast number of the search results, the researcher opted to analyze those articles within the

periods of 2011 to 2017 only. As for those publications that were obviously not relevant were ignored. Articles on work-life balance from other countries were also omitted from the analysis. Moreover, other terms and combinations of words were used in the search, including "doctor balance life," "work-family balance," "doctor challenges," "doctor burnout" in order to ensure not to miss out any of the related articles. The selection of articles was therefore carried out by using relevance or purposive sampling, which involves the identification of textual units that lead to answer the research question (Krippendorff, 2004).

Besides the newspapers, most of the other related articles and government official documents were primarily obtained from the website of the Malaysian Administrative Modernization and Management Planning Unit (MAMPU), Malaysian Public Service Department (JPA), Malaysian Ministry of Health (MOH) and Malaysian Medical Council (MMC). Most of these articles represent government development policies and plans on a variety of development agendas, including the health sector. The MOH is the ministry responsible for the health system, whilst the Malaysian Medical Council (MMC) specifies the basic functions of medical practitioners' registration, practice, obligational service and arrangements (in accordance with the Medical Act of 1971). The materials covered the periods from 2011-2017. The content of these documents mostly discussed about related aspects on government dilemma and strategy to overcome the burden faced by health practitioners in Malaysia. It also outlined several challenges and approaches to address the burden on the health professionals. By reviewing and analyzing these documents, important information were implied that helped to establish clarity and consistency in answering the research questions.

From the above descriptions, a total of 30 articles were analyzed, of which 18 were newspaper articles, whilst the others were government official documents. Three advantages of conducting content or document analysis are non-reactive, time dependent, and cost-effective (Corbetta, 2003). Non-reactive emphasis on the ability to obtain information that that are free from modification due to the direct interaction between the researcher and informant. The use of the document is considered as time dependent whereby a researcher can look into the occurrence on a subject in the past.

3.6 Data Analysis

Two different data analyses were carried out based on the data types, semi-structured interview and observation. The analyses were performed immediately once the data have been gathered after each interview and observation session.

3.6.1 Semi-Structured Interview Data Analysis

Thematic analysis was used to analyze the semi-structured interview data. The process of identifying, analyzing, and reporting patterns (themes) from responses or data is regarded as thematic analysis. The researcher use these patterns to organize and describe the data in detail (Braun & Clarke, 2006). Thematic analysis starts at the data collection stage and continues during the data transcription, reading, reviewing and interpretation process. This indicates that every interview was transcribed at the end of the interview. Then, researchers manually played the recording for a couple of seconds, transcribed what was heard to prevent losing any information. The

transcription was then kept in a form of softcopy to assist the researcher with the analysis.

Specific steps were followed to perform the thematic analysis in the study by adhering to the guides recommended by several authors such as Ajjawi and Higgs (2007), and Clarke (2006) and Ryan and Bernard (2003). The analysis method entailing six stages: (1) immersion, (2) understanding, (3) abstraction, (4) synthesis and theme development, (5) illumination and illustration of phenomena, and (6) integration and critique of findings. The different stages are summarized in Table 3.3. The analysis involves a recursive process, where researcher moves back and forth throughout the stages.

Table 3.3

Stages of Data Analysis

Stage	Tasks to do
1 Immersion	<ul style="list-style-type: none"> • Organizing the dataset into texts • Iterative reading of texts • Preliminary interpretation of texts to facilitate coding
2 Understanding	<ul style="list-style-type: none"> • Identifying first order (informant) constructs • Coding of data using software Atlas.ti 7
3 Abstraction	<ul style="list-style-type: none"> • Identifying second order (researcher) constructs • Grouping of second order constructs into sub-themes
4 Synthesis and theme development	<ul style="list-style-type: none"> • Grouping of sub-themes into themes • Further elaboration of themes
5 Illumination and illustration of phenomena	<ul style="list-style-type: none"> • Linking the literature to the themes identified above • Reconstructing interpretations into stories
6 Integration and critique of findings	<ul style="list-style-type: none"> • Reporting final interpretation of the research findings

(1) **Stage one: *Immersion***. The researcher went through the data (recording of interviews). Audio recordings of the interview were transcribed verbatim after each session. First, the researcher read the transcriptions while listening to the audio recording repeatedly to be fully immersed in the data and to acquire a detailed understanding of the data. Then, the transcribed interviews were stored in a computer software package for qualitative analysis, the Atlas.ti. Memos and summaries were created for each interview using this software to document thoughts about each interview.

(2) **Stage two: *Understanding***. In this stage of thematic analysis, the researcher identified the first order construct or in-vivo codes in creating new codes. In-vivo codes are the codes created by the actual words used by the informants, which are directly extracted from interview data. The researcher carefully read all the interviews several times and documented keywords as in-vivo codes in the document. Furthermore, researchers may find a few labels that may either fit under an existing code or may need to code a new category of data. Researcher used Atlas.ti 7 for assigning the codes. In-vivo coding process works best as a first reading of the data, which later combined, with a higher level of second coding across all the data. Therefore, this study principally utilized an inductive approach (data-driven) to see what emerged originally from the interview data. The following table (Table 3.4) provides examples of in vivo coding.

Table 3.4

In-Vivo Coding Sample

Transcript	Coding
<p>Q: Could you explain what prompted you to volunteer online? <i>A: I want to <u>share</u> basic information about child health that would help parents to understand more about their children's health, so that they would make the right decisions and not unnecessarily anxious</i></p>	Knowledge sharing
<p>Q: What were the most difficult points in maintaining balance between your work and family when volunteering online? <i>A: Challenges, is I think in overcoming <u>priorities</u>, which one comes first. Conflicts arise when two or more tasks have to be done simultaneously. For example, you have a DB task and at the same time you have a job to complete. So, I give priority to my work first. But you'll have to reschedule the other job to get the higher priority work done</i></p>	Prioritizing

(3) Stage three: Abstraction. At this stage, the researcher identified the second-order construct. A second-order construct is created by the researcher using her theoretical and own knowledge. The second-order construct refers to the abstraction of the first order construct (Ajjawi & Higgs, 2007). Thus, open coding was used where common themes related to the research questions were recognized and passages from the interviews were attached to the corresponding thematic codes. Atlas.ti 7 makes associations with the code created and the text; therefore any occurrences from the interview data which reflected as an example of the created code were referred to that code. In this study, the researcher used both an inductive approach (data-driven) to see what emerged originally from the data as well as deductive approach in searching for main themes from the existing literature. More specifically, in order to answer the first research questions, researcher start coding the transcript with the term based on the

theoretical lens of the study. For the coding process based on inductive coding, thirteen raw codes were generated. The raw codes identified in deductive and inductive coding are specified below.

Table 3.5

Samples of Raw Codes Identified

Research Question	Themes	Theme definition	Codes
The role of online volunteering doctors in balancing work and family	Central participant (use deductive approach)	Statements suggest that, being a central participant gives an individual more choices, makes it easier to manage the border, and achieves a balance between work and family life.	<ol style="list-style-type: none"> 1. Sense of responsibility 2. Meaningful job 3. Enjoy the work 4. Motivation to balance life 5. Manage to cope 6. Supportive family members 7. Mediated role of ICT
	Peripheral participant (use deductive approach)	Statements suggest that, informants do not internalize the domain's characteristics, are less competent and unable to manage their domains well, and are more likely to experience work-family conflict.	<ol style="list-style-type: none"> 1. Heavy workload 2. Work-family stress 3. Struggling to balance WF 4. Juggling multiple commitment 5. Difficulty of adapting new environment 6. Miscommunication

Another seven (7) codes were created from the interview transcripts, which were categorized as (i) reasons to volunteer and (ii) challenges when volunteering online. These codes can be used to assist researchers in analyzing research questions once they have been discovered. By embracing such codes, new theoretical connections can be presented to the study, as the theoretical lens itself does not demonstrate new patterns revealed by these codes. As stated before, this dataset focused on answering the first part of the research objective: to identify the role of online volunteering

doctors in balancing work and family. The list of codes identified can be find in Appendix E.

Where acceptable coding meanings had been identified, terms and definitions for final coding were adopted. When the coding of the data set was done, researcher searched for the patterns that exist in the data. When determining the patterns that are most applicable to address a specific research question, the frequency of occurrence of a specific code is essential. There are however, some codes that do not always appear but are helpful in supporting the interpretation of the research question. Thus at the phase of finding patterns in the data, the significance of a certain code to address the research question must be considered. For example, at this stage, the research question "How do doctors balance between their work and family while volunteering online in a health virtual community?" can be answered with the created themes from the data pattern and the border characteristics studied. It is evident that the strategies used by doctors volunteering online in achieving work and family balance are leveraging ICT, adjusting time management, utilizing other people and prioritizing. To ensure coding consistency, the supervisors confirmed the coding rules and the description of the data analyzed.

(4) Stage four: *Synthesis and theme development.* At this stage, the thematic analysis deals with identifying a major concept or theme of the study. Themes are defined as patterns interpreted from the data. A thematic categorization was created based on the responses of each informant. The codes and categories developed in the previous steps were reviewed several times against the research questions to determine

the main themes of the study. The transcripts were reviewed again if there were any additional references to the themes or any new themes had emerged from the data.

The main themes of the study were identified by categorizing concepts based on similarities and differences. Here, themes and sub-themes were reviewed separately to determine whether they formed a coherent and reasonable pattern. Then, each theme was reviewed to determine how significant they were to other themes and matched with each other for exact representation of the phenomenon study (Braun & Clarke, 2006). The modified themes were also observed and contrasted for similarities, differences, and connections between them. Here, a total of 19 unique themes were finalized based on the interview data.

Lastly, the themes were weighted based on the relevance to the research questions and uniqueness to be incorporated as one of the most significant themes of the study. This stage entailed the researcher to persistently move back and forth between the literature, texts, and previous analysis, shifting from parts to whole in accordance with the hermeneutic circle. Hence, the interpretation of the phenomenon under study evolved. Refer Appendix E for a complete list of the themes and its definition. The following table (Table 3.6) revisited the main themes identified for answering the research questions of this study.

Table 3.6

Main Themes for the Study

Research questions	Main themes identified
RQ1: Roles of doctors volunteering online	<ol style="list-style-type: none"> 1. Central participant 2. Peripheral participant
RQ2: Strategies used by doctors volunteering online in achieving work-family balance	<ol style="list-style-type: none"> 1. Leveraging ICT 2. Adjusting time management 3. Utilizing other people 4. Prioritizing

(5) **Stage five: *Illuminating and illustrating the phenomena.*** At this stage, the researcher reviewed again the literature for connections between the themes identified and the theory since they can emerge both from the data and the theory (Ryan & Bernard, 2003). Significant themes were selected based on their strong connection to theories. This guaranteed that the data was accurately connected to the main questions of the study. This was approached by searching for evidence and examples of work family balance among online volunteer, which were discussed in the literature, and exploring how they managed to balance both domain and the challenges they faced. Other than using an inductive approach in coding, main themes was also created by using findings from the theory, where broader themes mainly borrowed from the literature. For example, the themes ‘central participant’ and ‘peripheral participant’ were directly represent concepts in the Border theory Relationships between the themes and sub themes were examined and compared constantly to form a network that serves as a basis of a conceptual framework. Then, the current themes were

refined, recorded or discarded whenever it was necessary. From here, the findings can shed light on the informants' experiences.

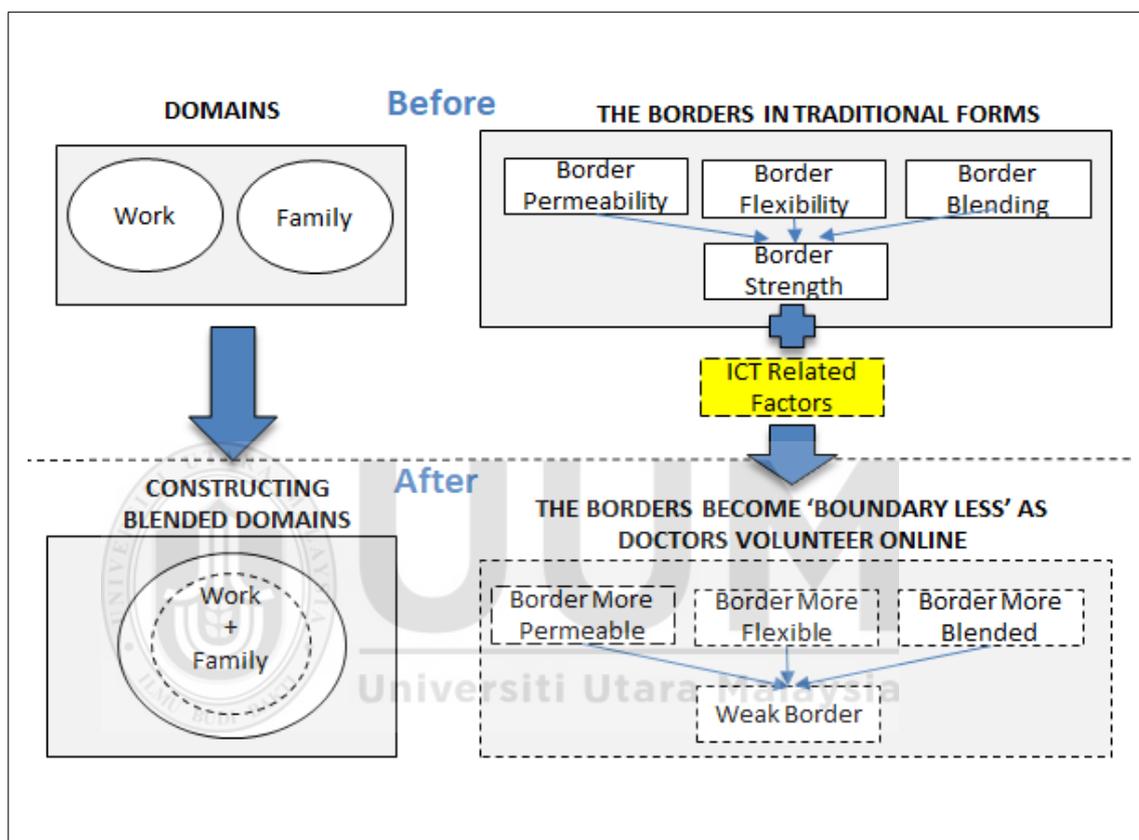


Figure 3.3 The 'ICT Related Factors' Theme was incorporated into the Border Characteristics in the Border Theory "Before" and "After"

The idea of "constructing blended domains," which refers to the blending of work and family domains, cannot, however, be tackled using the original Border theory's concepts, as shown in Figure 3.3. The border between work and family life has blurred in this case, with interview data indicating that when doctors volunteer online, all three border characteristics (permeability, flexibility, and blending) have become 'boundary

less' (represented by the dotted line around the border characteristics). This is due to the finding's theme of "ICT related factors," which may contradict with the Border theory's original constructs. The concept of the blending domain due to technology-mediated factors was coupled with key terms borrowed from Clark (2010) and Semercioglu (2017) to explain the identified themes. They believed that the cyberspace domain has merged all conventional realms and altered the relationship between space and time, as well as the structure of traditional borders. This may explain a new theoretical relationship, such as the existence of a new domain identified as the "cyber domain," and contribute to the existing work-family border theory.

(6) **Stage six: *Integration***. The last stage in the data analysis involves reporting and discussing the outcomes, which encompasses of investigating the characteristics of the themes, uncovering the connections between them, and reporting the findings using standard formats. The outcome of a thematic data analysis could be a list of themes related to the phenomena or a complex model demonstrating the themes and its connection via a thematic map.

The report of the findings began from the initial stages of data analysis when explanations about each code and pattern of relationships were documented in memos in the Atlas.ti software. Memos were recorded throughout the process of coding to document insights and ideas generated during the coding process. These memos can also be served as an extra data to be analyzed.

Interpretive findings from the analysis of the study were reported using recognized formats such as typical quotations, conceptual frameworks and suggestions for future research. The data analysis was completed by discussing the results related to the research questions and the previous literature, recognizing the limitations of the study, and suggesting practical recommendations. The study's findings were presented in a diagram (refer Figure 3.4) that depicted the relationships between all of the documented themes and their relationship to the theory.



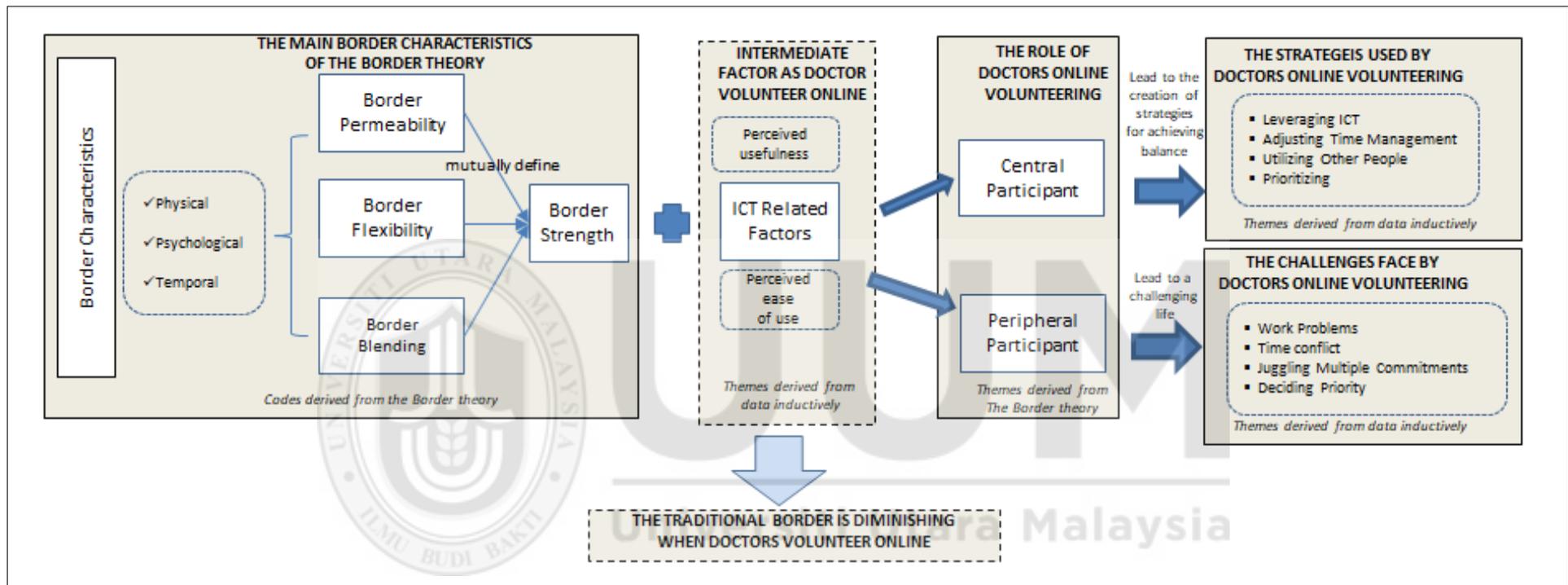


Figure 3.4 Revised Key Findings of the Study

3.6.2 Facebook and Document Review Data Analysis

Content analysis involve the data from the DB Facebook page as well as data from the document reviews. The content analysis consist of six steps: (1) formulation of the research question or objectives, (2) selection of communication content and sample (3) developing content categories, (4) finalizing units of analysis, (5) preparing a coding schedule, pilot testing and checking inter coder reliabilities, (6) analyzing the collected data; which are based on the recommendation by Stempel (1989). Here, the content analysis for both DB Facebook page and other documents reviewed were discussed.

A. DB Facebook page

In comparison to DB Twitter, the decision to analyze the DB Facebook page was driven by the fact that it is the most popular social media site with the most readers. In 2017, there were 24,411 active DB Facebook users, while there were just 2100 Twitter followers. User-generated text on Facebook, which can be supported by photos, videos, or emoticons, can be used to communicate subjective information not usually seen in traditional communications (Franz et al., 2019).

(1) Formulation of the research questions or objectives

The analysis focuses on the content elements that are crucial to the study by providing a specific statement about the research problem or objective. The identification of the subject was addressed by analyzing the relevant communication material. For instance, the research question in this study asked ‘What is the possibilities of online volunteering doctors to balance work and family?’ and ‘How do doctors balance

between their work and family while volunteering online in a virtual health community’.

(2) Selection of communication content and sample

The next step is to identify relevant communication material to address the research question, as well as to decide the time frame that will be covered. The total number of posts, user comments, shares, likes, and the number of posts that occur on weekdays were manually collected to determine DB informant "engagement" in the Facebook platform. The number and distribution of FB posts used for analysis are shown in Table 3.7.

Table 3.7
Number and Distribution of DB Facebook Posts

Organization	Statistical data					
	Duration	Number of posts	Number of comment	Number of share	Number of 'like'	Number of post shared on weekday
DB Facebook Page	Jan 2017 – Nov 2017	33	309	1054	4493	30
	Jul 2016 – Dec 2016	50	578	1510	4766	50
	Total	83	887	2564	9259	80

(3) Developing content categories

The content categories were clearly defined boundaries within which the categories of data are coded for evaluation. They were derived from the research question and are included in the past literatures and associated studies. Content categories are created in response to the query: (1) What is the possibilities of online volunteering doctors to balance work and family? and (2) How do doctors balance between their work and family while volunteering online in a virtual health community?.

The essence of content analysis is the development of the category structure to characterize the piece of text. Each category of content must be clearly and thoroughly described, demonstrating what kind of material should and should not be considered. Such descriptions should be clearly defined prior coding starts. Categories can come as part of a word, a paragraph belonging to a single category only. The categories of content generated for the study is included in Figure 3.5.

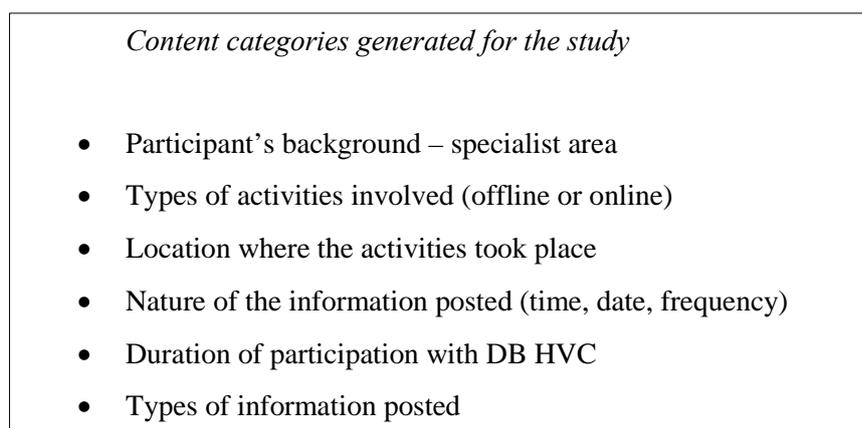


Figure 3.5 Content Categories Generated for the Study

(4) Finalizing units of analysis

The units of analysis is the smallest content unit that is coded. The unit of analysis could be a word, a phrase, a symbol, a theme, an actual article, or an overall movie or a part of a program. The unit of analysis for this study was DB Facebook posts. After reading the posts several times, the type of postings were discovered. Besides, the number of comments, shares and 'likes' also were used as part of the units of analysis for the study. The total of data were manually coded. Figure 3.6 shows the units of analysis developed for the study, which are *Informational* and *Social* posts.

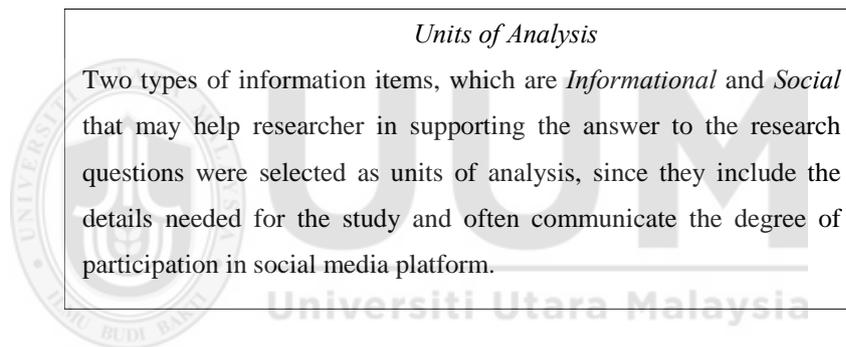


Figure 3.6 Units of Analysis Generated for the Study

(5) Preparing coding schedule, pilot testing and checking intra coder reliabilities

The process of developing the coding schedule were in line with Miles and Huberman's (2004) guidelines for recursive coding. For an early coding, main concepts in previous research were used. The data were manually coded and verified by one of the supervisors. Consistent with past researches (Luarn et al., 2015; Oram et al., 2018; Han, Sung, & Kim, 2018) four types of content post were used as coding; *informational, entertainment, remuneration and social*. As a preliminary step, a first

"read-through" was performed by using the established coding scheme. The posts were coded based on the coding scheme. The coding scheme were then refined and an operational definitions of every posting type was established based on prior research. The final coding scheme identified only two types of content postings: (i) *Informational* and (ii) *Social*. Overall, there were 73 *informational* postings and 10 *social* postings identified (refer Table 3.8).

Table 3.8

Summary of Content Types from July 2016 to November 2017

Content type	Number	Purpose
Informational	73	Promote DB programmes
Social	10	Raise interaction
Promotional	0	Raise awareness
Entertainment	0	Raise entertainment values

Then, prior completing the content analysis, it is important to pilot the coding schedule. A small sample of the FB postings were tested to be analysed in order to detect any discrepancies and flaws in the construction of coding schedule. For this study, two types of postings were possible to be coded since they can fit into these specific categories. To carefully analyse the prior coding, the final revision was conducted. Finally, in order to establish for code consistency, the researcher as the coder used a method known as intracoder reliability. Since the DB FB content analysis is the secondary data for the study, and in fact, it is considered as a small-scale study,

only the researcher as the single coder individually code and cross over the process. In this process, the researcher codes a subset of the analysed text and again codes the same content at some other different time, especially when the content is overlooked from the first coding. Even though there may be some drawback to the method applied, according to Reichenbach (2014), ten percent (equivalent to eight posts) from the total sample postings (83 posts) were coded again and again and tested for reliability.

(6) Analyzing the collected data

The research questions offers meanings to data analysis, the phenomenon of doctors volunteering online to be observed, and the connections that may be discovered. An explanation of the main areas such as the types of content was used as a baseline to analyze the data. According to the research question, the results are reported as below.

The DB informants generally interacted with their users by posting content in average once in a week. Although the posting was made rarely (e.g., in average one post was done in a week), most of the posts were made on work days, where the informant is considered to work in the organizations. The results indicated that the informant's effort and passion to share real-time information and updates with the users may lead to an unknown circumstances whether they are able to manage both the online volunteering activities and job tasks at the same time. Yet, the findings from this secondary data is expected to show that the higher the level of interactivity in DB Facebook page, the more participants were likely to juggle between their work-family if the postings were made from either domains environment.

In particular, the high number of ‘informational’ shares and liking of posts indicates that DB informants have been active in exchanging the information that Mergel (2013) labels it as genuine user engagement. Both of these measures indicate a form of appreciation for DB informants who, for the sake of users, have made a hard work to produce the content. Overall, based on the research question and the findings of the content analysis of DB Facebook page, there were not much information generated in order to expand the analysis from the interview, especially about how far the informant are able to manage their different life domains because according to Mkono and Tribe (2017), individuals who have engaged in cyberspace do not identify very well between various types of action and experience. The codes generated from the analysis indicated the active engagement of informants in online environment is predicted to interfere with their life in offline world. This is demonstrated by Kuschel (2017) in her reviews about work and family development; where advancement in ICT and the need for immediate answers in online setting as well as the priority attributed to the customers satisfaction can be factors of work that dominate personal life, resulting in work-family imbalance. In particular, she emphasized that similar conflict can be formed when individuals engage in some sort of work-related activities, such as participating online which demand constant availability. Thus, the results of the DB Facebook page content analysis assisted researcher to discover how the content produced by the informants would shaped the extent of online engagement.

B. Articles review

The selection of articles consisted of 38 articles from several online daily newspapers and government official documents between the years 2011 and 2018.

(1) Formulation of the research questions or objectives

Researcher chose to utilize content analysis as a secondary method after establishing the objective of the study. This method is intended to examine records and articles, through a number of various media. One advantage of performing content analysis is that it helps the researcher to consider content from any length of time as long as it is relevant (Grinnell Jr & Unrau, 2005).

(2) Selection of communication content and sample

The articles were chosen to answer the research questions of this study. Altogether, 38 articles were studied, 22 of them were from online daily newspapers, eight articles from Ministry of Health (MOH) and Malaysian Medical Council (MMC) and eight from Public Service Department (JPA) and the Malaysian Administrative Modernization and Management Planning Unit (MAMPU). The material was analyzed from April 2011 to January 2017. The researchers also noted that 2011 was a watershed moment in the medical field in terms of the need for Malaysian doctors to adhere to the social media policy. The articles' sources are reported in Table 3.9.

Table 3.9

Number and Distribution of Articles

Source of articles		Number of articles	Total
Newspaper	The Star	9	22
	NST	6	
	Malay Mail	7	
MMC / MOH		8	8
JPA / MAMPU		8	8
		Total	38

(3) Developing content categories

The main objective of developing categories was to enhance the understanding of the subjects and to communicate data. Researcher used an open coding (inductive coding) technique to determine the categories. This approach required a process of making lists or titles when studying a material. In order to explain all dimensions of the content, the articles were reviewed many times and jotted down as many headings as relevant in the comments. The analysis produced a number of different headings from a single document. The headings, as well as the newly formed categories and subcategories, were then compiled (Appendix D). Table 3.10 shows examples of categories and subcategories generated during the content analysis process.

Table 3.10

Example of Categories, Subcategories and Sample Open Coded Text from the Content Analysis Process

Category	Subcategory	Sample of open coded text
WFB strategy	Flexible work arrangement	Improved flexible work arrangements will better promote work-life balance through modification of weekly working hours, flexible working hours and part time work
WFB strategy	Time management	It was crucial for everyone to pull away from work and take on effective time management of tasks and put aside time for their loved ones at home.
Policy	Social media guideline	Throughout the use of social media whether for official or personal purposes, MOH staff must ensure the ethics of using social media
Policy	Government plan for healthcare	The main aim of implementing a healthy public policy is to create a supportive environment to enable people to lead healthy lives
Challenges	Work-life imbalance	The 32-year-old woman, who only wished to be known as Dr. MH, said she decided to stop her housemanship after 14 months of training because the long hours were stressful and there was no work-life balance

(4) Finalizing units of analysis

According to Robson (2002), a text, phrase, part of pages or phrases, the amount of conversation participants or the time used for conversation may be an analysis unit. The unit appropriate unit of analysis for this study is the 38 reviewed articles which is significance unit throughout the analysis process.

(5) Preparing coding schedule, pilot testing and checking intra coder reliabilities

All data were analysed for content and coded with the predetermined categories after a classification has been formed. Categories were used to describe the various

meanings that the aspect of achieving work and family balance for doctor volunteering online could be used as a categorization structure when analysing all document reviews. The final coding scheme identified were (1) work family balance strategy, (2) policy and (3) challenges. Overall, there were 10 subcategories identified as shown in Figure 3.7.

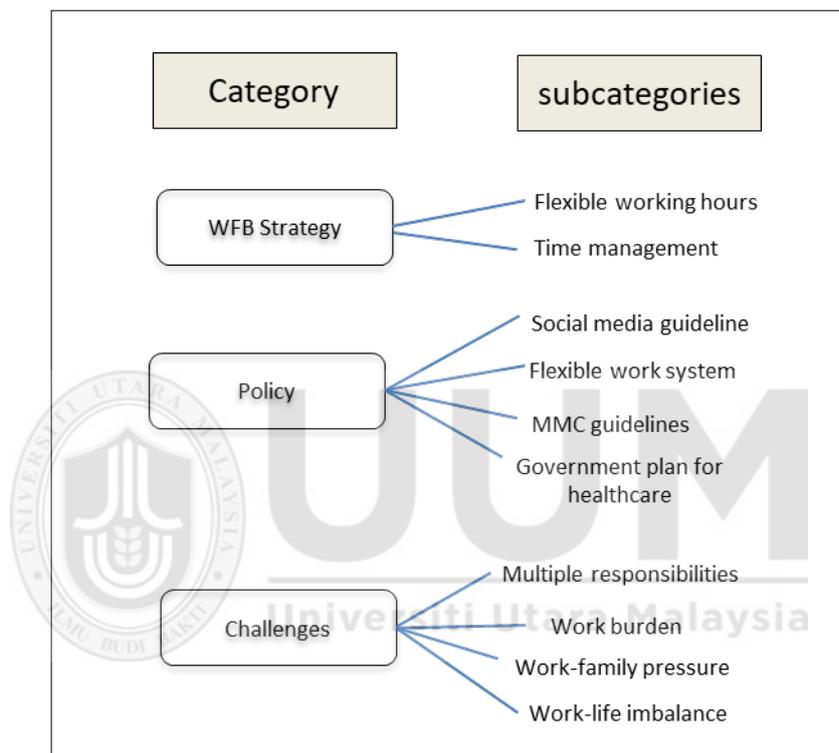


Figure 3.7 All Categories and Subcategories Generated from Content Analysis

(6) Analyzing the collected data

The findings based on the first research question, (1) What is the possibilities of online volunteering doctors to balance work and family, revealed that informants face several challenges due to work burden, work and family pressure, work-life imbalance as well as holding multiple responsibilities in life. The challenges in the work-family itself

has place further blurring on the border. The challenges are mainly based on the conflict of the informant's roles in their surroundings, leading to work-family conflict. The concept of centrality operationalized by Clark (2000) in her border theory demonstrated that the informants in this study are less competence in harmonizing their domain responsibilities, thus experience difficulties in determine when and where they should establish the border. Although the government provides numerous policies and directives to promote the engagement of informants in online volunteering, they do not offer adequate guidance to support the implementation, as individuals see it differently.

According to the second research questions, (2) How do doctors balance between their work and family while volunteering online in a virtual health community; the result shows that the informants have used many strategies to establish and maintain the boundaries between work and family areas and to meet the needs of the domain. In addition to having flexible working hours, time management also is important in creating these boundaries. These strategies enable informants to minimize the difficulties of online volunteer work which can be conducted at home or at work. Researcher was thus informed by the results of content analysis to find out how the content generated would determine the experience of user participation.

3.7 Data Validity

Case studies can be evaluated with certain criteria built for them (Eriksson & Kovalainen, 2015; Yin, 2013). Yin (2013) suggests four strategy to be considered in

establishing quality of a case study, which include construct validity, internal validity, external validity, and reliability.

As the study is a single exploratory case study, researcher employed the construct validity tests through member checking. With member checking or also known as participant checking, the validity process transfers from the investigators to the informants in the study. Lincoln and Guba (1985) suggest that qualitative researchers should establish the validity of a case study through member checks. They believe that it is the most powerful tool to demonstrate credibility in a study.

Member checking process involved sending e-mail to informants to gain feedback on the preliminary findings of the study (refer Appendix C). By engaging the informants in the interpretation of the initial findings, it may enhance the validity of the study (Birt et al., 2016). Only four out of the 17 informants (24%) replied and confirm that the findings drawn from the interviews reflect what was meant by them.

For this study, the member checking process includes the following steps. First, the researcher sends WhatsApp messages to the informants informing the purpose of the member checks procedure. Then, once they agreed to take part, an e-mail attachment discussing the preliminary emerging findings based on the interview done was sent to the informants, who were asked whether they agree with the facts and interpretation of the findings and if the finding was realistic based on their experiences. Then, the informants confirm or disconfirm with the emergent themes presented and finally reply the e-mail on their responses to the researcher. The emergent themes were confirmed and supported by the informants. In this manner, the informants increase

credibility to the study by having the opportunity to respond to the data and the final narrative.

Reliability refers to the consistency of results produced by a measuring instrument when it is applied a number of times in similar situations (Yin, 2013). According to Yin, to achieve reliability, a case study protocol (CSP) that outlined the whole process of data collection and the procedures to be followed was used. This protocol standardized the investigation by allowing other researcher to follow the same procedures in performing the case study and arriving the same results. In accordance with the protocol, data was collected systematically during the interviews by using a set of prescribed questions.

Since this study is exploratory, internal validity was not embedded. Internal validity in case studies attempt to create a causal relationship. However, according to Rowley (2002) and Baskarada (2014), internal validity is indeed relevant to case studies that are explanatory only and not exploratory or descriptive. Similarly, the external validity to capture the issue of whether the results are generalized to wider population was not enforced in this study. For example, Calder, Phillips and Tybout (1982) argued that any single case study does not require external validity in the sense that no other study is adequate to confirm or challenge propositions. Further thoughts by Findley, Kikuta and Denly (2020) suggested that every conclusive external validity requires analysis of different dimensions.

3.8 Summary of the Chapter

This chapter presented the research methodology of this study. The rationale for using a qualitative research methodology with a single case study was explained. The primary data collection techniques to be employed are interviews, document reviews, and observing messages from a social media platform. Then, the technique of data analysis was presented as well as a discussion on the validity of the study.



CHAPTER FOUR

FINDINGS

4.1 Introduction

This chapter presents the findings of the study based on the following research questions: (i) What is the likelihood that by volunteering online, doctors are able to attain work and family balance? (ii) How do doctors balance between their work and family while volunteering online in a health virtual community? Analyzed data from the interview and content analysis were used to support or dispute the hypotheses discussed in Chapter Three. The first section of the findings describes the demographics of the doctors volunteering online. The second consists of background profiles of the doctors in the context of this study. The subsequent section focuses on the main themes that appear in the following areas: (1) The role of online volunteering doctors embraced in attaining work and family balance and (2) The strategies used by online volunteering doctors in attaining the balance between work and family.

4.2 Demographics of the Informants

This section describes the demographics of the informants who had been selected through the purposeful sampling method based on the following criteria, (i) doctors who had actively participating in DoktorBudak (DB) health virtual community (HVC), (ii) at least of three years participation, and (iii) married medical doctor.

Throughout the year 2017, the researcher started collecting data by interviewing the doctors involved with the DB via different modes. Two of them agreed to be

interviewed face-to-face, one of through Skype, and ten responded via electronic mail and four through phone call.

All informants in the study were self-identified as Malaysian. 35.3% of the informants were males and 64.7% were females. Majority of them were Malay (12 informants, 70.5%) while others were Chinese (4 informants, 23.5%) and Indian (1 informant, 5.8%) aged between 31 to 40 years at the time of the interview (64.7%). The lowest age group is five percent representing those aged above 50 years old. Overall, the average age of the informants is 40 years old. In addition, a vast majority of informants (13 out of 17, 76.5%) reported having school-aged children, where majority have less than four kids representing 70.5%. All informants currently worked in Malaysia except one informant was based in United Kingdom doing his clinical fellowship.

Most of the informants have working experience between 11-15 years with 58.8% (10 out of 17), followed by those between 16-20 years (23.5%: 4 out of 17), 5-10 years (11.7%: 2 out of 17), and more than 20 years (5.8%: 1 out of 17). These doctors were mostly attached in public hospitals (70.6%:12 of 17) as compared to those in private hospitals (29.4%: 5 out of 17). As for their spouses, all of them were fulltime employees, in which nearly half (52.9% or 9 out of 17) were also doctors, whilst 47.1% (8 out of 17) work in non-medical sector. To preserve the confidentiality of the informants, their original names have been substituted using specific codes. Table 4.1 presents the biographical profile of the informants. Further details regarding the informant's work and family are discussed in the next subsection.

Table 4.1

Demographics of the Informants

Informant	Age (years)	# of Children	Length of Employment (years)	Practice Setting	Weekly Work Hours	Spouse Occupation
R1	38	1	13	Private	80+	Private sector
R2	45	3	20	Government	60+	Doctor
R3	39	1	14	Government	50+	Private sector
R4	38	0	13	Government	70 - 80	Private sector
R5	38	2	13	Government	50+	Private sector
R6	38	5	14	Government	50+	Doctor
R7	37	3	12	Private	70+	Private sector
R8	37	4	13	Government	50+	Doctor
R9	33	0	10	Government	40+	Private sector
R10	35	1	12	Government	45+	Doctor
R11	56	2	32	Government	50+	Doctor
R12	40	6	15	Government	50+	Doctor
R13	43	2	18	Private	50+	Doctor
R14	43	6	17	Private	45+	Doctor
R15	40	4	16	Government	40+	Doctor
R16	39	0	14	Government	40+	Private Sector
R17	34	2	10	Private	40	Private Sector

4.2.1 Background on the Informant's Work

General questions regarding the informants' work include the nature of their work, working hours and passion towards the work. These questions were asked to have holistic understanding of the nature of medical work. The information are also needed to understand whether the informant's work aspects may influence their perceptions on the decision to volunteer online and whether it may bring significant impact on informant's life experiences.

In terms of working experience, all of them had been practitioners for at least ten years once they have completed their houseman-ship (two-year training). In addition, three of them (17.6%) were doing their subspecialty fellowship training (specialization

training which roughly takes between 3 to 4 years), two in local hospital and one in United Kingdom hospital.

Typically, the working hours for these doctors ranged between 40 to 80 hours per week. Most of the informants only provide their official working hour which is nearly nine hours per day on average not including their on-call hours. Majority of the informants (11 out of 17, 64.7%) worked more than 60 hours a week and the remaining (35.3%) worked between 40 to 50 hours. They were also required to work extra hours including being on-call, as emergencies could occur at any time. The on-call hours normally fall on weekend, and again it depends on the informant's schedule as mentioned by one of the informants:

“... but I have a roster to go on-call on weekdays and weekends, ranging from 4-6 days per month”

For those who worked in government hospitals, they may opt to have flexibility in starting and ending the working day (i.e. staggered hours) which is nine hours per day. However, most of them stressed that they can rarely go back on time due to certain urgencies such as patient and clinic matters. In addition, they still need to comply to on-call duties both on weekdays and weekends; a situation where doctors should be available at any time whenever needed in the hospital. Three of the informants (17.6%) who worked in the private hospitals highlighted that they were on-call on most of the days in which the working environment is slightly different from those working in government hospitals. Two of the informants were pursuing fellowship training in their fields of expertise which put further responsibilities to them.

There are two types of on-calls that have been practiced in government hospitals namely active and passive calls. Those who do active calls have to be present in hospital, while those doing passive calls may stay at home but have to be on standby mode whereby they need to be ready to go to the hospital the moment being notified. Usually, an active call requires a doctor to work at least 15 hours during the non-office hours on weekdays and the whole 24 hours on weekends. For example, when a doctor is scheduled to be on-call on a weekday, he/she starts the normal working day from eight am to five pm, followed by the on-call and the hours could stretch from five pm till eight am the next day, subsequently continuing with another working day till five pm. In short, this doctor stays in hospital to work for more than 30 hours before going home on the following day. When a doctor is scheduled to be on-call on a weekend or public holiday, his/her active call starts at eight am until eight am of subsequent day, staying in hospital for at least 24 hours till the completion of that active call. These active calls can be challenging and exhausting at times especially when ones is working in a short-handed department or hospital.

However, almost all informants share the same point of views on their work hour and responsibilities regardless working in government or private hospital. An informant working in a private hospital shared his heavy workloads which makes him tired by the end of the day. His statement is as follow:

“I am the only pediatrician in this hospital, so I am on call most of the days. The clinic at this hospital is open from 9 a.m. to 5.30 p.m., there is someone on standby for emergencies 24 hours a day. I am just off duty for two weekends

a month, if I can find a replacement doctor to cover for me... Of course, by the end of the working day, I'll be tired”

Below is an example quoted by a female doctor in government hospital with twenty years of experience on her working hours:

“It really depends; the official time is between 7.30 am to 4.30 pm. I choose Flexible hour 1 (Anjal 1). It is official but I always get home by 7.15 pm, so it depends. Sometimes I return home after Isyak, but it is on average. We have official time, but I rarely go back on official time”

Another informant with 14 years of experience stated that it is the nature of their job to work long hours:

“Normal working hours are around 70 to 80 hours a week, about 1 to 2 days per week on call”

However, despite a hectic life schedule, almost all doctors enjoyed their work and find it meaningful to them. One of them mentioned that patients need him so much in the hospital, hence, he always try to know his patients better. Others stated that they enjoyed working with children even though sometimes they find it challenging especially involving ill patients. One of the challenges as determined from the analysis of the online news articles was the inability to balance work and family life, which was associated to the stressful and long working hours.

4.2.2 Background on the Informant's Family

The questions on family were related to the informant's family members such as who is in the family, how often and how much time they spent together, number of children, the children activities, whether the informants enjoyed being around the family and whether they are doing any house chores.

In terms of the number of children, most of them (29.4%) had more than three, 23.5% with two, and 11.7% with three. As for those with one and none were slightly more than 17%. About 88% (15 out of 17) lived in a nuclear family, whilst the remaining 11.7% lived with their extended family members (i.e. parent in-law, grandmother). All doctors gave positive impressions concerning their family lives by stating that they are living happily with their spouse and children. They were always looking forward to go home and be around with their family members as home is viewed as a place for them to rest, find comfort, and foster family relations. As one informant noted:

“Of course, by the end of the working day, I'll be tired. However, the time with family will be better”

Another informant, a highly work committed doctor also expressed her good feeling of being with family. She even aware and understand on her responsibility as a wife and mother:

“No matter what the day looks like, I look forward to go home. I am so lucky to have a family that understands my job and it's my main responsibility as a mother and wife when I go home”

When it comes to household chores, most of the informants admitted that it can be time-consuming, tedious and overwhelmed to do chores such as washing, cleaning or cooking. The informants considered it as another chore to their daily life. From the study, 41.1% (7 out of 17) of the informants hired and used domestic helpers in order to alleviate the household work. Meanwhile, 5.8% (1 out of 17) used a day maid, 29.4% (5 out of 17) did the housework on their own and the rest did not mention how the housework was carried out.

4.3 Background of the involvement in DoktorBudak Virtual health community

The first and last part of the interview questions were asked to capture the experience of the doctor's participation in online volunteering. These basic questions are posed to understand the doctors' engagement as online volunteers as well as to identify difficulties that they may encounter while playing different roles.

I. Reasons to Volunteer online

One of the questions relating to the factors that influence the online volunteering in the HVC is "Could you explain what prompted you to volunteer online?". The reasons revealed are organized into the following four themes:

- 1) Information and communication technology (ICT) related factors
- 2) knowledge sharing
- 3) peers influence
- 4) rewards

a. Information and Communication Technology (ICT) related factors

ICT related factor is one of the themes emerged from the data regarding the factors that influence the doctors to volunteer online in the HVC. This theme refers to the ICT infrastructure and technological factors that may influence a doctor's decision to volunteer online. The factors in adopting technology are (i) perceived usefulness, and (ii) perceived ease of use.

i. *Perceived usefulness* in this study refers to the extent to which informant belief that volunteering online through VHC is perceived as providing benefits to them in performing the OV activities. For instance, a doctor had acknowledged that his decision to volunteer online was based on the convenience of being able to perform the volunteering tasks anywhere:

“Can be on the go (on my mobile) or at my desk (on my PC)”

ii. *Perceived ease of use* refers to the extent to which informants believe that it is easy to use the ICT tools for volunteering purposes. For this study, the ICT tools are defined as communication devices (e.g., smartphone, laptop, wireless network) and the Internet-based applications such as blogs, virtual community and social networking sites. Most of the informants (9 out of 17, 52.9%) stressed that the characteristics of the specific ICT tools, its application and the unique nature of the Internet (e.g., accessible anywhere anytime, global nature) allow doctors to access online easily and beneficial for their online volunteering activities while performing other work-family activities. The following is of the statements made by a women doctor:

”First because online is easy, means you can access it while at home at work, you can actually do your volunteer work at home. So it doesn’t take much of my time, because it is very flexible. You can write your article whenever you want ...”

Some indicated that the ICT is easy to be used and operated. For example, the VHC implementation was described as easy to perform as shared by one of the informants:

“... Yes certainly, the technology has facilitated my work ... for example when we have a lot of articles... now, to be up on the website, it is easier to answer the various posted questions. So we answer, for further info you can refer to this article posted before”

Another mentioned that the information to be shared with the public can be presented in an easier way:

“... it is very easy to share our articles, just insert links via FB and Twitter to our website”

The results of a DB Facebook page content analysis were compared to those obtained from the interviews in order to assess the number of postings published in a specific day including the frequency of communication that took place on the DB Facebook page. Interestingly, almost 87.2% (75 out of 86) postings were published on the weekdays, which was on the informant’s working day. This indicates that it was easy for informants to operate social networking sites such as Facebook and they did not have to extend their efforts to operate it to reach their desired goal.

b. Knowledge sharing

Knowledge sharing signifies the transferring or disseminating health knowledge and experience by the informant through interaction via VHC in order to empower the public and patients in making best health decision. The sharing behaviors were mainly affected by the passions towards sharing knowledge as well as the social media influence. Accordingly, 64.7% of the informants (11 out of 17) described their enthusiasm in sharing expertise in medical practice, while some chose to share personal experience. One informant felt obligated to share something useful in terms of controlling the spread of misinformation and correcting perception particularly on health issues such as follows:

“Sense of responsibility to share and disseminate useful medical knowledge to the public. Too much false information or myths circulating around and we as the so called experts have to do something about it”

One of the informants talked about her personal experience in handling her own child:

“I like to share things that I deal with every day at home. Erm, one of my topics on DoktorBudak was about colic ... I really want to share my experience”

Many informants demonstrated their professional responsibility to share knowledge and information by helping the public generally and parents, in particular, in assisting them to determine the ‘right action’ when handling their children’s health. As one informants phrased it:

“I want to share basic information about child health that would help parents to understand more about their children’s health, so that they would make the right decisions and not unnecessarily anxious”

c. Peers influence

Some informants stated that peers (refers to DB founder or the co-founder) influenced the informants to join the VHC and become part of the team as an online volunteer. One of the informants stated that,

“Personally, I was approached by Dr. A because we used to work in the same hospital, and I’m no longer there. ... One of the things is that Dr. B is my school friends, so I’ve known him for a long time. ... One reason is that I know these are people who are passionate about their work in this DB”

Other than that, some informants mentioned that they were approached by their peers with a request to participate with the DB because of their specialist skills. This was illustrated well by one of the informants:

” Because, apart from being an ophthalmologist, talking about lactation and parenting is something I’m interested about. So that’s why I was invited to join DoktorBudak by Dr. A, because of my active participation in the lactation awareness programme”

d. Rewards

The rewards received by the informants also kept them to continue volunteering online while maintaining other commitment in their life. Almost half of the informants (8 out

of 17, 47.1%) identified intrinsic derived rewards, such as feeling valued and enjoying one's role. The informants stated that these rewards were provided by simple recognition from parents or readers who read their published articles. In one of the interview sessions, a doctor stated that she feels appreciated when the online readers were sharing her articles as follows:

“I'm looking forward to seeing the article when it's published, here's our article. When someone else shares, we become self-motivated. It's as if it satisfies and rewards me. It's also a pleasure to help others”

Another informant viewed the volunteering online as seeding good act that will yield reward in the form of a reciprocal act of blessing from God:

“First, it is because of the 'pahala,' or reward, that I might receive in the hereafter. It's a platform where I can make a contribution. Then it's not about recognition or respect. Moreover, as a Muslim, you are naturally motivated to do good deeds in order to gain Allah's pleasure. When I spread knowledge and share it, I am rewarded with 'pahala,' and I gain an advantage in hereafter”

II. Challenges when volunteer online

To understand the difficulties confronted by the online volunteering doctors in managing work and family, this question was enquired; “What were the most difficult points in maintaining balance between your work and family when volunteering online?”. Most of the informants (7 out of 17, 41.1%) reported facing one or more difficulties such as work-related problems, time conflicts, prioritization, and multiple roles juggling.

a. Work Problems

One of the informants working in a private hospital uncovered how he was burdened with so many roles in his life causing them to be less productive in his work:

“I think the most difficult part is that I am overloaded with tasks from all angles ... As I already mentioned, I wear a variety of hats or roles. To address clinical issues for patients, to lead the clinical team and ensure adequate funding for the team, supervising a large number of students from different backgrounds. ... I'm more likely to be less productive if I'm overwhelmed”

Another female informant was saying that:

“... because of the nature of my work, I am on call almost every day. So if I have a patient in the ward, the staff can directly contact me. So, sometimes when I'm at home, I get phone calls and other things, and I get distracted from work, especially if I'm dealing with difficult patients. Then I was constantly thinking about it. ... I think it would be difficult, but I think I would feel guilty if I did not give it my all, putting only about 30% of my effort into volunteer work.”

b. Time Conflicts

Another common subject that the informants (9 out of 17, 52.9%) disclosed was the time spent in performing one role makes the informants unavailable to allocate enough time to another role. For example, the informants claimed of having difficulty in

fulfilling multiple commitments in life due to not having enough time particularly when both husband and wife are doctors, as described in this quote:

“The challenge is ensuring that everything is correctly done. I'm referring to the amount of time spent caring for the family, the baby, and the husband ...”

The informants also felt that the time spent responding to questions, preparing and writing up articles related to OV works required their additional time to their already busy schedule. One male informant noted that,

“My main challenge is a lack of time... It can be difficult for me to stay up late at night to do the OV work when I'm busy with my work and tired from it.”

Another informant highlighted that she needed some time to prepare answers to the questions received from the DB readers. She stated that:

“Most of the questions can be answered, but not all of them can be answered right away. And we had to create some sort of answer scheme, and in fact, we now allocated some time to respond, because there's no way to consult a doctor without first seeing the child, and the doctor can't tell you exactly what the problem is without seeing the child.”

Another challenge shared relates to the time constraint in performing the principal work as doctor and the OV responsibilities, as well as being with family:

“... my main challenge is a lack of time, and a lack of discipline to set aside more time for DoktorBudak work”

Due to the difficulty in allocating time wisely, some of the informants fit their time for performing OV works into their downtime such as during lunch time, while waiting for patients and while commuting. One informant described:

“I usually work on it after work on my laptop, or in between patients or during break hour in my clinic room”

c. Deciding Priority

Some of the informants mentioned that one of the challenges of maintaining a balance between work and family when volunteering online was deciding on the priority. Specifically among the dual-doctor family, passionate about work and job demands increased the likelihood to prioritize work over family. The informants discussed how they encourage their partner to deal with family matters as their work requires them the most as a male informant, for example, stated:

“I love my job, and there are moments when it is physically and mentally difficult for me. Hmm... I, for one, have made my work a top priority. Even though my wife is a doctor, I believe that my profession takes precedence over hers. I prefer to delegate everything to her, including family matters. That's the best way. That's what I thought... Even though I tried to prioritize my family over my work, I think my job, specifically my patient, needs my attention the most. But I'm not entirely satisfied with how I handled them on the inside”

Another expressed that by volunteering online, there were many other important things that need to be fought for their attention in life. In some cases, prioritization is difficult

to make since priority may change due to high demand on certain matters particularly on those related to the principal work:

“Challenges are... When it comes to overcoming priorities, I'm not sure which one should come first. When two or more tasks must be completed at the same time, conflicts arise. For example, suppose you have a DB task and a job to finish at the same time. As a result, I prioritize my job. However, you'll have to reschedule the other job in order to complete the higher-priority work”

d. Juggling Multiple Roles

Some of the informants (41.1%, 7 out of 17) believed that managing multiple roles results in role overload. Therefore, it is critical for them to manage it wisely especially among women. For example, one of the informants; being a mother, married to a doctor and stay with in-law family admitted that managing various roles produce obstacles in terms of being fair for all commitments that she has:

“I think there are a few challenges, for example, I must choose between various responsibilities at different times... For example, I am a mother, a wife, and an in-law daughter. Actually, performing that role is really difficult, and sometimes it's right, because the job role picks some prominent ones, and then you know when you get home you have to pick up on the mother's roles, and I feel sometimes I'm unable to exceed because other things seem to be more urgent, and I feel it's not fair to my husband. So I feel that juggling between the different roles such as time, and trying to be fair to all roles, is extremely difficult”

A similar comment was made by another informant, who stated that being in a dual-doctor marriages pose greater difficulty in harmonizing the work and family responsibilities and informant need to compromise to minimize the chances of more conflict:

“...My husband is a Specialist, and he also has on-call over the weekend and Saturday OT as well, so we need to discuss about it and then divide the tasks. For example, if he has to go to the hospital, I'll be the one to look after the family members”

Despite their different roles, some of the informants were aware of the struggle to gain good control in their life. Informants were able to identify the cure to the difficulties and strategize to manage life better by involving all family members in her everyday jobs, as stated by the informant:

“I find the most challenging tasks to be maintaining a balance while juggling multiple responsibilities at the same time, as well as managing expectations. Importantly, I believe that teamwork is important to creating success, which is why I encouraged all of my family members to participate in our daily activities”

4.4 Findings of the First Research Question: What is the Possibilities of Online Volunteering Doctors to Balance Work and Family?

This section presented the findings derived from the first research question of this study that revealed the role of online volunteering doctors embraced in attaining work

and family balance. To address these research questions, data from interview questions were analyzed and content analysis was used to discern the interaction patterns of users on the DB Facebook page and the document reviewed. The researcher has categorized the answers into two main themes: (1) central participant and (2) peripheral participant. These themes emerged from the guided theory, the Border theory (Clark, 2000).

A. Central participant

Central participant is a main theme in informants' reflections on their participation in the work or family domains that allowed them to better manage work and family life. The transcripts of the informant suggest that most of the informants (14 of 17 or 82.3%) give priority to the work domain and identify it as more crucial than family or any other personal matter such as OV works, yet they are able to balance both domain in their lives. One of the informants who is currently doing his clinical fellowship expressed his optimistic view regarding his career and other roles in his life, which is equally important to be maintained:

"I believe that work and ambition are an amalgamated roles. I need to be happy to do what I do. If I don't, I'm going to burn out in my field. It is a long-standing field... At times, I look at myself, if I am struck with an illness, will I be able to function outside the box ... so that I can maintain a sensible and 'humane' life..."

Several informants also noted that they have greater feeling of engagement towards *work* especially related to improving *patients* care and satisfaction. In the words of one informant, he described how important his work is and carefully guard his work domain:

“... On most days, I look forward to going to work... Because I think my job is meaningful and I feel my patients need me”

Another informant also indicates that he is connected to another central participant (who is his patients) in his workplace and strongly identifies with the organization:

“... If it had been possible, I would not have cancelled my clinic due to the patients' expectation that they had arranged an appointment with me... Of course, we need to have a lot of experience in order for you to feel more relaxed and sure that you'll be able to handle any unforeseen circumstances”

A similar response was received from another informant as follows:

“... Kalau saya tak on call hujung minggu tu, saya tak angkat telefon. Tapi kalau patient saya dihantar pergi ke kecemasan ke, sepatutnya dia call doctor yang on call, tapi saya lebih suka dia call saya supaya saya tahu apa jadi daripada tak tahu. Bila minggu depan saya datang, patient ni dah jadi macam ni. Yang ni bukan saya seorang rasa, semua doktor macam tu”

[“...I wouldn't pick up the phone, if I weren't on a weekend call. But if my patient is transferred to the emergency room, they will have to call the on-call doctor, but I prefer that they call me so that I know exactly what's going on rather than not knowing. When I return the following week, this patient has

already worsened to this stage. It doesn't bother us because all doctors are like that"]

Another respondent disclosed that the doctors viewed their work more than a job, thus stimulate the sense of responsibility towards other competing demands in their lives:

"... My work is more of a responsibility for me than a paying job. But, if I have an incoming message or a phone call, it takes me a while to get away from my children, so I sometimes let that happen. And I'm not saying I'm not guilty of it. I'm the kind of person who doesn't mind if people call me at work, say, late at night or on a weekend"

The next response supports the view that work has predominate the lives of informants, even though they sometime feels distracted with the job. In the words of one informant, she stated that in order to keep life in balance, she have learn to manage with her daily practice successfully:

"... Of course, my workload requires my undivided attention, but in such a way that you would be able to cope if something goes wrong. You'll learn more as time passes by"

Likewise, informants feel a sense of control at work and believe that they can manage the challenges of integrating all domains into their lives:

"Being a doctor, then in a sub-specialty programme, and then living a couple of miles from the hospital creates a significant challenge for me. But it's up to me to use it as motivation to improve. At the same time, we want to make sure

that our families and children are well-balanced. Even though we're specialists in our field, my family, career, and volunteer work must all be balanced"

Moreover, findings from the content analysis of the reviewed articles (Government Service Circular) indicate that the government's efforts to introduce a staged working time arrangement can promote work-life balance among employees by adjusting working hours. Employees will be given the flexibility to attend work during the time of entry and return as long as they fulfil one day's working time under the flex scheduling arrangement. Employees were able to manage their working hours to meet their individual needs owing to this type of arrangement.

Obviously, for some informants, their focus is usually on their work, and they do not mix work with other domains in their lives:

"Work has to be work for me, and home has to be home. There couldn't even be any grey area for me"

In most situations, work can be emotionally demanding, especially when treating patients with unique needs and behavior, however the situations they encounter are acceptable. As explained by one informant:

"Katakan ada patient yang sangat tak sihat, dia tak mau warded. Mesti kita risau, dia selamat ke tak di rumah. Memang perkara tu agak mengganggu. Macam bila ada pesakit yang agak disturb dekat wad, bila kita balik kerja pukul lima tu, saya memang akan teringat, saya akan telefon. Susah tak nak

take care tu. Kita nak make sure patient tu ok... Mungkin kita dalam bidang medical; kita tak boleh split, the boundary tu agak loose sikit.. Ia tidaklah sampai mengganggu kita, setakat ni Alhamdulillah”

["Let's say I have a very sick patient who refuses to be warded. Of course, we're worried, wondering if he'll be safe at home. This is really disturbing. If I had disturbed patients on the ward, when I go back at five, I will call because I can't stop thinking about his condition. It's difficult to completely ignore them. We want to be certain that the patient is in good health... Maybe in the medical field; we can't isolate ourselves from work because the boundary is too thin... thankfully, it hasn't bothered us yet"]

Managers also help to develop a work atmosphere that is not only sustainable but also motivates informants to volunteer online, and promotes informants to participate in OV work, including in the profession, making borders more protected and obviously shape central participation.

“..even my Pengarah Hospital is also supportive”

["..even our Hospital's Director is also supportive"]

According to the content analysis of the DB Facebook page, 24 of the 86 posts on the page were about the informant's activity on local television (TV) stations, and they were posted on weekdays. This supported the findings of the interview, which revealed that in order to participate in activities outside of their organizations, informants would almost certainly need approval from their superiors. The superior consents and agrees to their active participation since they can juggle multiple responsibilities and ensure

accountability in their work, according to the findings. It is important to note that the superior support and freedom provided promote employee motivation and participation in online volunteering activities, allowing them to better manage their lives.

Regarding the informant's involvement in DB VHC, the same positive tone was expressed as follows:

“I think last year, our Director General (DG) of Health, Dato Norhisyam, in fact has called for a meeting for social media ... So these doctors who volunteer online to give information ... and yes, I think the government, of course our DG of Health, dia memang seorang yang social media savvy, he support the use of social media ... so dia memang encourage kitaorang...”
[“I think last year, our Director General of Health, Dato Norhisyam, actually called for a social media meeting... so those doctors who volunteer online to provide information... And yes, I think the government, especially our DG Health, is a social media expert who supports us to use social media... so it is very encouraging...”]

B. Peripheral participant

Next theme is **peripheral participant**. The findings from this study shed light on the minority group of informants (3 out of 17, 17.6%) who have actually been categorized as peripheral work-related participants, as demonstrated by the fact that informants do not identify themselves with the goals, cultures and values of work-related domains as a result of family-related preferences. One of the informants with sixteen years of work

experience pointed out that having a family was seen to be highly valued and that they needed to reconsider their family priorities first, as stated below:

"To be honest, at this point in my career, I've chose to prioritize my family and myself... I find the most challenging tasks to be keeping a balance while managing multiple responsibilities at the same time, as well as managing expectations"

One of the informants who just shifted her work from a government hospital to a private hospital said that she struggled to control what's going on around her life:

"Erm, it isn't easy, for sure. When you're a mother wise, I believe you need to balance everything in your life. But I'm still struggling because I keep changing jobs as I move from one place to another. We recently moved from Sungai Buloh to Shah Alam, and then to Tanjung Malim, so all is in chaos. Well, I've just started a new job. So I'm still struggling, but I think I'm making progress. However, I feel I need to make a greater effort to volunteer. I do have time; it's just that I don't feel it a top priority. That's why it's usually number five on my priority list, and why I'm the way I am"

In addition, interviews demonstrated that the need to focus more on the family is another aspect that may impede the central participation of doctors in the line of work (specifically on-line volunteering) and cause changes in the work-family balance.

" It's not easy at all; in fact, I think work is expanding, and I know I'll soon have to dedicate more time to my family when the baby's born in July, so I'm worried that online volunteering will suffer greatly"

Some informants found it difficult to manage their family members (e.g., children, spouses) which can sometimes be seen as distraction to them forming some sort of conflict in the work and family domains:

"My family seems to be under lot of pressure. To begin with, each child is different. So I'm struggling with my first child's temper tantrums, the second's need for attention, the third's recent sickness, and I don't think I'm talking to my husband enough. We see each other every day, but I think there is a communication breakdown here. We're talking less because we're focusing on the kids, I believe. I wish I'd known I'd spend at least an hour a week to merely talking to my husband. As a result, I wish I had more time to communicate with each and every family member... My husband, for example, does not always understand my work, such as when I need to do the ward round in the middle of the night. So, I have to get to work, but I'm still having trouble communicating"

As expected, the heavy workload was one of the main challenges faced by informants in acquiring a balanced life while volunteering online. One of the female informants said that her challenges at work were the inability to focus on online volunteering because of the higher number of patients to be entertained,

"You can't spend too much time at work answering this DB question because you know the government hospital has too many patients. Doing two jobs at once is not easy"

Both job and parenthood encourage informants to reconsider their life priorities and give a different meaning to their lives, thus fostering central participation in the home domain. One of the usual quotes was:

“.... It isn't easy, for sure. When you're a mother, I think every role in the world needs you to balance everything, but I'm still struggling....”

Malaysia has a shortage of doctors, and according to some documents analyzed, despite the fact that the overall doctor-to-population ratio increased in 2018 (1:632) compared to 2013. (1:581) (Ministry of Economic Affairs, 2018). Doctor shortages have intensified the workload of doctors in the government health sector, according to the Ministry of Health (MOH). Other factors have affected the quality of healthcare services, such as poor coordination at all levels of government, limited resources, unclear demarcation of roles and functions of agencies, and a trend of housemen leaving government hospitals to join the private sector at the end of their contracts (Dousin, 2017).

4.5 Findings of the Second Research Question: How do Doctors Balance between their Work and Family while Volunteering Online in a Virtual Health Community

Researcher sought to discover how doctors volunteering online manage and negotiate the borders between work and family in order to attain balance. As the border or boundary defined by Clark (2000) does not embrace the boundaryless structures defined by the technologies, researcher was inspired to identify the strategies doctors

volunteering online used in delineating the work and family domain where the role of ICT might be accelerating permeability between these boundaries. In order to identify the strategies used by doctors volunteering online, several questions were asked in relation to the characteristics of the border in work and family domains namely permeability, flexibility, strength and blending. The second research questions findings was confirmed mostly through data from interview but not supported by data on content analysis.

4.5.1 Border Permeability

For Clark (2000), border permeability refers to the degree to which a border allows physical, temporal or psychological aspects of one role or domain to enter another. For example, an individual who is able to accept calls from a spouse while at work or vice-versa or when workplace rules requires that he/she be available by hand phone during on-call. In some ways, permeability also can be seen as actual interruptions from one domain into another, of which the employee has very little control (Bulger et al., 2007).

a. Physical Permeability

In terms of physical permeability, most of the informants (14 out of 17, 82.3%) commented that OV works could take place after working hours at home specifically during their free time. One informant for example explained that she did not allocate any space or room at home for her to engage with her OV works:

"Usually, I do it on a table, but I don't have a specific room for it"

Only 17.6 % (3 out of 17) of the informants had a dedicated space (e.g., home office) to work on their laptop or computer. For instance, one female informant manage her space more effectively at home where she dedicated one room as her work area where the room allowed her to use mobile technologies to set the border between work and personal activities. She stated that:

"At home, I have a separate room where I do my work, my OV work"

Other female informants considered a home office was a space at home where could perform her OV works and other work-related things:

"I did my OV activities at home in my free time, using my home office"

The informants also rely on the mobility and connectedness at home which lead to work-family integration. Thus, the informants did not require specific space at home, as stated:

"I usually work on it from my laptop at home after work. I use my home Internet to work on my OV tasks and other related work, and I can integrate my work and personal lives in this way"

Informants emphasized that the mobile devices such as smartphones with internet connectivity that combined phone and other computing capabilities had facilitate them to perform OV works at anywhere with no physical location restriction. As an example, one female informants with two children explained where she engaged with her OV works at no specific location:

".. Normally, I did my OV works anywhere je. You know, nowadays the smartphone semua tu have become more powerful and dia ada features untuk kita connected to Wi-Fi and so on kan. So it could be anywhere anytime"

[".. Normally, I used to do my OV work everywhere. You know, smartphones have become more powerful, with features that require Wi-Fi connection, and so on. So it could happen anytime, at any moment"]

Another informant commented:

"I've done most of my OV work on my iPad, so I can do my homework anywhere I want"

This is also supported by content analysis results, which indicates that the majority of postings on the DB Facebook page were made during working hours. This demonstrates that using Facebook as an interaction platform allows informants to focus on their volunteer activities from everywhere. Informants consider Facebook as a great tool for fulfilling their particular needs.

Furthermore, some of the informants expressed that it would be difficult for them to perform the OV work at the workplace environment as the job demands their concentration, even though the OV works did not take much of their time. For instance, a 43 years old pediatrician found it challenging to perform his OV works at the workplace:

"I hardly do it at work because it would be extremely difficult"

Similarly, another female informant said that she preferred to do her OV works while at home rather than in the workplace;

".. Bila-bila je tapi mostly di rumah la, di ofis tak sempat la..."

["..I couldn't make it at the office at any time, but mostly at home..."]

b. Psychological Permeability

In terms of psychological permeability, most of the informants (64.7%, 11 out of 17) indicated that it can be very difficult to think about other things while at work because the work needs them to concentrate intensively. One informant commented:

"It could have an effect on the quality of our work, um... I'm still thinking, but my focus is drawn to work"

And another informants commented:

"I think it is too difficult to do so because my work needs me to focus entirely on one task at a time, and if I just need to run errands, I think I can take paid leave or half a day off. So I'll volunteer before or after working hours, while my daughter is sleeping, and then I'll have more time to do other things"

The same intonation was the voice of another female informant with two children who said that the demand for work limited her thinking to other unrelated matters:

"I only do it when I have spare time. I think I'll have time to think if my work is finished early, but most of the time we're dealing with a lot of emergencies, so there's no time to think about it"

However, a minority of informants (35.3%) indicated that they were able to take care of their work while thinking about other things, like errands, family matters or unfinished online volunteering tasks. One informant said that it's not a big issue for her to work in the hospital and think about something else unless something like family issues has diverted her focus. She commented:

"Erm, yes I can do that. I don't think I've had any problems with it. It's just that when anyone in the family is sick, I get distracted. However, I'm usually fine with it"

A similar comment was made by a different informant, who stated:

"It's possible if you're just thinking about something. However, it is not possible to take care of my job and other responsibilities at the same time"

c. Temporal Permeability

From the aspect of temporal permeability, it refers to how far informants allow activity from one domain such as work, family or OV works to get into another domain at a time. In other words, the OV role hold by doctors may permeate into the informant's life during they were at workplace or at home. In order to get the information related to this, among the questions asked were 'Are you making personal calls during working hours?' The majority (88.2% or 15 out of 17) indicated that they rarely makes or receive personal call except those required in emergency situations. One informant stated that, "Yes, if urgent matters arises". The informants who really need to make phone call during work hours were concerned with parenting roles such as to check on children left at home after schools or sick child.

Other than that, the answers to the permeations of temporal borders aspect were derived from other questions related to the way informant spend their time to do their OV works. Since doctors volunteering online performed their OV tasks anywhere at work or home, the types of temporal permeability sources from work or home. When the informants were asked about where and when they performed the OV tasks, almost 70.5% (12 of 17) of those who were interviewed indicated that they performed their OV tasks both at work (e.g., during break hours) or at home (e.g., during free time). Inadvertently, the informants were forced to accept permeations of their temporal boundaries using mobile technology. For example, an informant from private hospital explained that he is able to do his OV work anytime he is free and available, be at work or home:

"I usually work at home after work from my laptop, or from my clinic room, in between patients, or during breaks"

Similarly, other informants stated that:

"I started writing in my free time, such as at home late at night or during my lunch break at work"

"I don't have a proper schedule for example, if I want to write and share something with the public and have plenty of time, I will set a date, that is, I would set a time for me to write, for the benefit of the public; otherwise, I don't have a fix schedule"

Additional similar data can be found in the content analysis on the DB Facebook Page. Between May 20 and June 4, 2017, the informants made three weekend posts, which fall under the category of "Informational". The first published post received 51 "likes" and 39 comments. The third post was "like" by 1467 users and 121 users commented on the post. On average, at least two posts categorized as "Informational" and "Social" were published weekly by the DB admin. This confirmed the interview findings that informants tended to engage less often with social media content at a certain point in their lives, most likely due to work-related tasks.

Only a small number of informants (4 out of 17, 23.5%) indicated that they only managed to do their OV works either at home or at work as the environment does not allowed them to focus on other things. For example, one informant stated that he choose to do his OV tasks when at home as the demanding nature of his work particularly in private hospital did not permitted him to focus on other things. His work needed him to be *"If there is a request or need to see a patient, we are available 24 hours a day"*

Similarly, a senior medical consultant at the government hospital stated that she would prefer to do her OV work at home because there is limited time at her workplace. She stated:

"There is no one-size-fits-all space that can be filled anywhere. At work or at home, at any time; however, I prefer to do it at home because I don't always have enough good time in the office"

4.5.2 Border Flexibility

Flexibility is the degree that the spatial and temporal boundaries are pliable. More flexible boundaries permit roles to be performed in a various settings (e.g., a remote worker) and at different times (e.g., a family-run business), whereas less flexible boundaries restrict when and where a role may be performed (e.g., doctors within a hospital setting).

a. Physical border flexibility

In terms of the attainment of physical border flexibility, the informants were asked to describe their job. Here, researcher tried to assess the actual place that work, family and online volunteering activities were conducted. Over half of those interviewed described in details that their work required them to be in the hospital physically (e.g., consulting room, ward, doctor's office) within their official working hours, involving examine patient in the wards, conducting ward rounds, seeing patient in the clinic, and performing management tasks. Thus, they are not many rooms for flexibility to take places as the job often expected the informants to be constantly available and responsive within the hospital environment. One informant from private practice described her daily day as flexible yet exhausted and demanding:

“... Since I don't work from 9 to 5, my work schedule is currently quite flexible. Today, for example, my clinic is in the evening... So, after seeing patients on the ward in the morning, I return home. Then I began my clinic in the evening, so it's quite flexible. It's just that it can be exhausting ... If any possible, I will not cancel my clinic because patients have arranged appointments with me”

In addition, the on-call system (also known as active-call) also requires the informants staying in hospital for at least 24 hours until the 'active-call' ended. The jobs and the system in the hospital can be challenging and exhausting especially when informant is working in a short-handed department, as pointed out by one informant

“When I'm on standby call, which is most days of the month (at least 27 days in a 30-day month), I can't completely switch off”

Even though the job does not allow much flexibility in terms of being present in the hospital, somehow the informants still are able to respond to other emergency cases (e.g., sick family members, attending to children activities at school, outside programs related to OV job) with the permission and consideration from the head department. One of the informants reported having the flexibility to schedule her time away to attending personal matters such as online volunteering promotion program during her work hour with the support from the supervisors:

“I supposed I have .. apa macam understand on personal level, I rather macam anak I sakit, I just boleh schedule time away. Macam I was invited to NLKO (Nasi Lemak Kopi O program) or Astro Awani, boleh je schedule time. Even my Pengarah Hospital is also supportive”

[“On a personal level, I suppose I have... understanding, for example, if my child is sick, I can schedule my time away. If I've been invited to NLKO (Nasi Lemak Kopi O programme) or Astro Awani, I can schedule my time accordingly. Even my hospital's director supports me”]

When the informants were on 'passive-call', they were not expected to be in the hospital; instead they can be at home with family. However, being at home with family on standby and ready to be called back to the hospital whenever necessary does not make much different compared to being on an 'active-call'. One informant described how he managed his work-family boundaries within the space of home. He said,

“ I've established boundaries around my time and expectations from my family while I'm on call. My family knows that if I need to take a call, work on the computer, or go the hospital, I must meet those commitments ”

On the other hand, some of the informants working in a private hospital (5 out of 17, 29.4%) expressed that being a Specialist there were more stressful as they should *“to handle the roles of houseman, medical officer, and consultant on my own, I had to multitask.”* The informants also need to work 24 hours a day and seven days a week, and they can be called at any time of the day.

Even though the informants were subjected to their workplace during working hours, this did not prevent them from engaging in online activities such as OV tasks because the availability of technology (be it the Internet or mobile devices) provided them with more options in terms of time and location. The informants were able to choose from a number of work and non-work spaces due to mobile technology, particularly the smartphone. One informant, for example, described how she was able to juggle everything, including taking notes on her OV works on her mobile device during long drives home:

"To remind me, I have calendars on my smartphone. Then, if I have an idea I'd like to share while driving, I'll write it down on my phone and return to it later"

Informants reported that advancement in mobile technologies have facilitated them to do their OV works anywhere. One of the informant claimed that she can performed her OV works at anywhere she loves:

"With technologies such as smartphone, Wi-Fi and so forth, my volunteering can be done on the go (on my phone) or at my desk (on my computer)"

b. Temporal border flexibility

All of the informants reported long working hours from the view of temporal border flexibility. Their perspectives differed somewhat depending on where they work (private or government hospital). Despite the fact that most informants who worked in government hospitals worked between 50 and 60 hours a week, most of them rarely could go back in time due to a lots of work or to avoid traffic jams. In comparison to other workers in the workforce, one informant stated that his work hours could reach up to 80 hours a week, not including his on-call hours (basically one to two days a week). Another female informant, who has five children, described how she juggles her life as a doctor, a mother, and a fellowship trainee while living a little out of the way. The following is her statement:

"... We have a lot of work to do, and there is a lot to be done, so you can't always go home. hmm... It's not always flexible, maybe because I'm doing a fellowship and am quite busy... Normal hours are 7.30 a.m. to 4.30 p.m., but I am rarely able to make it. It can go until 5.30 p.m., and then I'm expected to

*work in the ward on weekends to see patients. Sometimes 8 hours per day ...
Basically I can't fixed my schedule ...”*

A small percentage of private hospital informants (29.4%) said their work hours were almost similar to those of government hospitals. However, the majority of them work normal working days for six days a week. Despite the fact that their work hours are similar, some of them are required to be on call almost every day, according to the following informants:

“... I am on call at this hospital most days of the week; clinic hours are 9 a.m. to 5.30 p.m., and I am available for emergencies 24 hours a day. I am just off duty for two weekends a month if I can find a replacement doctor to cover me”

To obtain further information about the flexibility of doctors working hours, the informants were asked “Can you choose your working hours?” Even though some of the informants practised flex-times (i.e. staggered hours), the majority of them (82.3%, 14 out of 17) reported that their normal working hours are set at eight hours a day. They must, however, spend at least 50 hours a week in the hospital and endure on-call hours that can last up to two days a week. However, other considerations such as the informant's position and rank, as well as the number and availability of Medical Officers (MO) and Specialists at the current hospital, dictated the on-call slot. For example, a consultant doctor believed that her on-call time in a month is not that long. The following is her statement:

“Since I'm a consultant, I'm on call on a rotating basis. It depends, not even once a week. I am on passive-call, since I am at second level. We may be at

home during a passive call, but we are on standby and ready to be called to the hospital at any time. They can contact you if anything comes up, and this can also be done over the phone..... We can request work time, but it is not very flexible. It is depend on the number of MOs (medical officers) available. Three times a month on average”

The informants also discussed how their "flexible work hours" impacted their families and other commitments, necessitating careful planning for work and family life. Since their hectic schedules and high demand jobs did not allow them to spend time with their families, the informants arranged their family time around work. When one of the informants spoke about 'scheduling in' her family time and managing the commitments of being a mother, spouse, and online volunteer, she said:

“My family time is scheduled around my DoktorBudak and my work. But I can pick work in the sense that, say, if I have a DoktorBudak event and we have a national road tour; we're planning to spend the day in Kuantan, visit my husband's hometown..... I'm mostly planning my life around it... I don't set aside time for my family, but I do set aside time for work. Only after that that I was able to arrange my family time around it”

Some of the informants stated that they would seek help from family members, such as their own mothers, in order to better manage their time and address the issues of day-care children, as follows:

“..So there's a long period of time where I don't have any kids. So they're 18-month-old twins, and I'm sending them to my parents, who live about 4 minutes

away. So I'm sending them to my mom, who is also hiring a day maid, as if they'll be coming 4 hours a day. It'll be about 6:30 p.m. or 7 p.m. when I get home from work”

Another informant made a similar statement, saying:

“Family members, such as my mother, have been very supportive. She is mostly supportive of me when I have problems. She's very helpful, and I'll call my mother if anything goes wrong. Family roles, our helpers, our mothers, and our parents are all very supportive to me”

Some informants are entrusting the assistance of their spouses to better manage the work-family divide:

“If I can't commit to my family, I'll ask my husband for help, such as if I can't commit to my children's activities”

“...My husband is very understanding and supportive if they are a lot of work and in a hurry. If he sees that I'm stressed out and need to get some work done quickly, he'll take care of the kid or bring the kid out so that I can start clearing things out”

Another informant expresses similar thoughts about receiving support from her spouse when she is needed to engage in DB activities:

“I supposed macam family supporting system for me, because I don't think I will be able to spend time for DB punya program, if I don't have a very supportive husband, supportive family”

["I thought it'd be like a family support system for me, because I don't think I could even spend time to the DB programme unless I have a very supportive husband or family"]

Receiving assistance from a domestic helper at home can also help informants cope with their work and family duties:

"Workloads kerja banyak untuk I dengan husband, since we both are doctor kan. So kita upah pengasuh la, so kita boleh la sikit better divide masa kita between jaga anak-anak dengan patient"

["My husband and I both serve as doctors, so we have a lot on our minds. So, we hire a helper to better split our time between the children and the patients"]

Several other informants shared that finding the perfect time management strategy for scheduling family time in relation to their professional work is difficult for doctors because they have too much to expect. Informants discussed how their family time and other commitments take second place to their work on their priority list:

"If ever possible, I would not have cancelled my clinic due to the expectations of a patient who had arranged an appointment with me. So maybe I'll try to adjust my family time and DoktorBudak commitments between my work schedules"

When it comes to fulfilling online volunteering activities like writing articles or answering questions, the majority of them rarely set aside time to do so; instead, they

simply set aside time and handle the OV tasks around their work and family commitments. Aside from flexibility at home or at work, the researcher looked at how the informant used ICT to support OV activities. ICT has helped the informants in performing OV activities in a more flexible manner, according to the informants. It means the informants were able to juggle several tasks at the same time. According to one informant:

“... online is easy, since you can do it from anywhere, whether you're at home or at work, you can do your volunteer work from home... because it is easily flexible”

4.5.3 Blending

Blending occurs when both high degree of flexibility and permeability is present around the borders (Clark, 2000). In other words, the borders of the domains are mixing up. Similarly, in Ashforth's work (2000), blending aspects of the domains is called as integration whereas keeping these aspects separate is called as segmentation. Strategies are selected to help individuals cope with the challenges of working and caring for their families.

In this part, informants were asked “Would you generally say that having to deal with family and personal-related matters such as OV has been a problem for you with this job, in particular?” 14 of the 17 informants said that having multiple roles, such as doctor, parent, spouse, and online volunteer member, provides them a lot of flexibility about how they choose to construct the roles. To manage the multiple roles they are engaged in, informants build their own life structure. For example, a male informant

characterized OV work as just another part of a life's responsibilities that can be handle, as:

"No, it does not give me any problems because OV is flexible and does not tie me. I can work on my OV after work hours... I can do my OV work outside of work hours and it does not interfere with my working time"

Given that she must maintain the roles wisely, a female informant with five children was also able to juggle all roles well. She shared her feelings in the following way:

"Not exactly, but I have to divide it wisely, so it's not a big issue for me"

Some informants reported that having a better work-life balance and the ability to multitask could help them deal with work or family life problems. Informants mentioned that problems can arise in any domain, such as work or family, and that these issues could influence informants' work in some way. One of the informants confirmed that having a good balance between work and family life enables her to reduce tension at work and other commitments in her life. Her comment:

"No, saya rasa benda tu macam go together. Kalau kat rumah tak happy, kat tempat kerja pun tak happy. So dia goes together. Dia kena work-life balance la. Work-life balance tu sangat penting especially perempuan la ... Work-life balance ni kita tak semestinya perfect all the time. .. Dia ada masa yang macam saya dulu, anak saya kecil stressed sangat kat tempat kerja. Memang terbawa-bawa jugak ke rumah. Rasa ramai ibu-ibu muda macam tu kan"

[“No, I think that things like this go together. If we're unhappy at home, we're likely to be unhappy at work. So it's all working out. You must strike a work-

life balance. Work-life balance is important, especially for women... You don't have to be perfect all of the time when it comes to work-life balance..... When my kids were young, I was very stressed at work. It was transformed into family life. This is something I believe many young mothers have felt”]

Blending psychological boundaries occurred when the informants used the ICT in general and the mobile technologies in particular in their work and family domains. The use of mobile technology made it easier to separate and combine multiple roles. Many of the informants (76.5%, or 13 out of 17) used technology, whether it was devices or applications, to create boundaries between home and work because it helped them coordinate schedules and juggle several tasks. One of the informants, for example, discussed how his work-family balance is maintained with the help of technology when participating in online volunteer activities. He explained:

“A smartphone with social media applications is very helpful in getting me to complete my OV works. It has a strong influence on me, but it does not interfere with my personal interactions with my colleagues and family”

Another informant made a similar comment, stating how important her smartphone is for managing her daily work, family, and online volunteering activities. According to one of the informants, they were able to multitask without compromising their current tasks, such as doing their OV tasks concurrently while doing other tasks (e.g., driving):

“...My smartphone was responsible for a great deal of it. I have a laptop, but I only use it on occasion. I use it for anything, including DB. I used to have it on my laptop, but now I think it's fine because I may need to answer questions

on the go, such as while waiting for the green light at a traffic light, so I put the emailed questions on my phone... I believe that ICT are very important”

Another question asked to identify the blending of the borders among the informants as they volunteer online is “As you volunteer online, how do you create a separation between your work and family life?” The majority of the informants (70.6%, 12 of 17) said that volunteering online enables them to do their OV work from anywhere and at any time. The use of ICT tools has allowed the informants to better integrate aspects of their work and family lives. The fact that the OV does not take up much of their time, the informants' ability to work anywhere at any time, and having an organized life are all reasons why they chose to integrate their work and family lives. While doing online volunteer work, a male informant reported that he balanced work and family commitments:

“I rarely create any definite separations so I can do my OV work and be with my family at the same time”

Another informant described how he managed his OV work at home while maintaining a reasonable work-family balance:

“I don't really create a 'separation' between work and family time since my volunteer work is done at home. I kind of mix it all together. If it needs a little more concentration, I'll do my OV work after my kids have gone to sleep or are engaged in other activities, be it night or day”

The informants were also asked about their preferences for keeping their work and family separate or integrated, i.e., segmenting or blending of domains. Almost two-thirds of the informants said they prefer to integrate work and family activities because their daily busy schedules limit their time with their loved ones. It has been reported that having sufficient time to attend to family responsibilities leads to a more 'balanced' life. Informant placed a high value on their work as well as their family lives. The following statements describe how informants make the most of her time with family members by dedicating some of her time later to make up for lost time with them:

“I'm guessing there would be some kind of integration. Let say I'm on call at work when my mother calls to inform me that my child is sick. I returned to pick up my son and bring him to my hospital and ward. You will have to make this sacrifice at some point in your life, and it will be for a good reason. I have the feeling that you've dedicated your life to being a doctor, so you'll make up for lost time. I had to make time to pay back when I took leave from work and spent time with my family”

Similarly, another female informant who works in a private hospital described how she balances her work and family commitments by allocating some of her off-work time to her family, especially her children:

“Erm, I bring my kids to work with me on occasion. Then, on the ward round, I put them together, but only when it's necessary. So, I rarely separate, my husband sometimes comes to my workplace also. No, I don't really separate work and family. I'm definitely allocating time to my family, which is

necessary. I'm going to try to have fun on weekends, do some family activities where I don't have to worry about work, volunteer work, whatever, since a lot of my work is on weekends. So, yeah, I tried to focus on my family, my kids"

A senior pediatrician, for example, shared his faith in life as:

"I was able to blend rather than split my time between work, family, volunteer work, clinical care, and teaching by integrating all of my regular activities. You know that being a doctor will take up all of your time and energy... I prefer not to be disturbed unless it is an absolute emergency. If I had to be on-call on a night that I would usually spend with my family, I had to make a trade-off, you know, for the lost time"

Only a small numbers of participants stated they prefer to keep work and family life separate for a number of reasons, such as focusing on family time. The informants talked about how much time they spent on each work and family:

"No. I keep them separately. Only work in the hospital. My colleagues or patients may obviously reach me at home for a short consultation, but I prefer to keep my family time and quality time as part of my growing family"

4.5.4 Strength

The border's strength is determined by its permeability, flexibility, and blending. When the border is very impermeable, inflexible, and does not allow blending, it is termed a strong border. A border, on the other hand, is weak if it allows permeation, is flexible, and allows for blending. The researcher looks at border strength from two

perspectives: border strength at work and border strength at home. At work, border strength occurs when an individual focuses entirely on work-related issues in terms of space, time, and thinking. While border strength at home occurs when individual are not doing work matters when with family.

a) Border Strength at Work

In terms of time and space, the majority of the informants (15 of 17, or 88.2%) said that they would dedicate their full attention to their work. Since they operate in such a high-pressure environment, they need to give a hundred percent commitment at work. In response to question “Would you say that most of your workload requires your undivided attention?” the majority commented that when they are at the work, work takes priority over family the majority of the time. As mentioned by one of the informants, patients' healthcare takes precedence over all other considerations. He said:

“Yes, a dedication to the patient's well-being is important. A career in medicine entailed a selfless emphasis on patient care”

Similarly, another informant stated:

“Obviously, my main job takes priority, but in my free time, I write articles and respond to questions on the online”

The informants also specified that they needed to concentrate on their work for the majority of the time, especially when they were on call. Because of the nature of the on-call system, which is necessary and inescapable, controlling the time in the rooms

during on-call would be challenging. When asked if their workload needed their undivided attention, one of the informants reported that she is disturbed when her workload increases and that she needs to concentrate on her job very closely, as follows:

“Hmm... Yeah, I believe my patients would notice if I was disturbed at work while dealing with them. Even my staff will notice if I get distracted. Yeah, I really need to focus on it...”

When it came to managing psychological border strength, the majority of the informants (11 out of 17, or 64.7 %) were completely focused on work while at work. The informants believed that when they were actively engaged in their work, such as with patient or during a consultation, the thinking about other things, such as those concerning family or OV tasks, were removed. One informant, for example, indicated that the nature of their job needs them to be completely focused on the task at hand, and that distractions from various sources can obstruct their focus, as stated:

“Yes. You’re surely aware that working in healthcare can be hectic, demanding, and time-consuming. And many of our duties require our undivided attention. Throughout the day, interruptions such as phone calls, requests from other doctors, and patients will arise, interfering with our already heavy workload”

Some informants stated that their main concern at work would be their work rather than the family. A female informant stresses the importance of not mixing the two domains as reported:

“No, not at work.. I don’t think about home. For me work needs to be work and home needs to be home. There couldn't possibly be a grey area for me”

Another informant said:

“I think that having a family has made me more human. I don’t believe in bringing work home”

Prioritizing was one of the main strategies mentioned by informants in order to manage work overload and family demands. Some informants, for example, felt that prioritizing helped them focus more on their jobs and provided more resources to get things done:

“The most difficult, I think, is if you are overloaded with tasks on all angles. However, in life, I must prioritize what is important and what is not. Balancing this would require more than just organization, aim, and ambition, as well as possibly some help. Often you have to be clever enough to use your own resources to achieve your goals or tasks. If you are in the right frame of minds, I think most of the task are achievable. If this isn't achievable, acknowledge your limitations and try delegating to others”

Other informants believed that their personal values helped in determining their priorities and, as a result, weeding out irrelevant items. According to a female informant:

“I rasa you kena prioritize what you value, yang penting dulu, then plan for it. Contoh you kena spend more time dealing with things yang important to you

dulu macam planning you punya personal development, but then you kena spend less time dalam benda-benda yang tak penting yang boleh cause you become imbalanced. Then, you kena belajar to say “no” to certain tasks yang kita rasa tak perlu kita buat. Actually, dia helps me to set boundaries, and halang I dari terlibat dalam benda yang tak sepatutnya. So that you boleh prioritize mana yang perlu”

[“I think you should prioritize your values and then make plans to achieve them. For example, you should spend more time to matters that are important to you, such as personal growth. You'd have to spend less time on less important things, and you'd risk falling behind. Then you must learn to reject any requests that you do not think are necessary. It actually helps in the setting of boundaries and prevents me from engaging in things that I should not be doing. As a result, you'll be able to prioritize your needs”]

Other informants, too, acknowledge her abilities and her role as a senior consultant, as well as her family's needs. She explained that as her children grow, she will need to adjust her priorities in order to concentrate more on her work, and that her children will need to understand and adapt to her situation.

“Memang, kita kan human, mana boleh tak fikir. Macam mana ya...Kalau saya busy memang tak sempat nak fikir, macam saya on the move memang tak sempat nak fikir, macam mana anak kat rumah. Kadang-kadang terlupa. Ermm, kita prioritize. Macam anak-anak saya pun dah besar, diaorang pun tahu, setakat benda remeh,tak payah la call. Kena marah je ngan saya. Tapi kalau dia sakit, dia akan call. Kalau saya dengan patient, saya tak jawab pun

phone, kalau penting diorang tahu la, dia akan call berkali kali. Kalau maksud saya dia tak call balik maskudnya saya anggap tu tak penting. So diorang tahulah, memang dah diajar dari kecil”

[In fact, we are all human beings. Well, I suppose... That's it. I can't think about it when I'm busy, like when I'm on the go. It's easy to forget it. Ermm, we're prioritizing. And now that my kids are grown, they understand that it doesn't matter in the end. I'm going to be mad at them. They will, though, call if they are sick. I wouldn't even answer the phone if I was with patients; if it was important, they'd call several times. I assumed it wasn't important if they didn't call me back. They've been learning since childhood, you know”]

It is worth mentioning that informants' faith in God and His grace has actually helped them in strategizing and controlling the two most important realms in their lives:

“Apart from the clichéd strategies of setting priorities and properly planning our work, I was strong in my belief that if you make time for Allah, Allah will make time for you”

b) Border Strength at Home

When individuals are not doing their work at home the border is considered to be strong. The border, on the other hand, is weak if individuals bring work home and do it there. The strength of the border at home is measured in terms of time, space, and thinking.

When the informants were asked “How often do you find yourself thinking about work while doing home-related things?”, the majority (58.8%, 10 of 17) agreed they often think about their work, particularly if they are caring for an ill patient. While she is at home with her family, one informant keeps thinking about the dominance of her work domain:

“Several times.... And if I'm not on call, if I have a patient on the ward, the patients are my patients, and the staff can deal with me about my patient.... So, if it's night or day, if a patient isn't doing well, I have to go to the hospital to treat them. Since it's my patient, if anything goes wrong with them, the nurse can call me even if I'm not on call. So I'm easily distracted at home, and my mind wanders sometimes, particularly when I'm dealing with a difficult patient, and I start thinking about it”

Other informants who wanted to put their family first mentioned that their main priority was still on their work during the week, even though they were at home. However, they made every effort to keep work out of their minds when spending time with their families over the weekend, as this is a priceless time for them to spend with their loved ones. Besides, another informant, a senior consultant, said that the nature of the job allows the informants to combine their work and family lives. He explained:

“I understand that as a doctor, our job can take a large portion of our lives, so I understand if you feel this way. Consider the patients, tasks that haven't been done, and other responsibilities”

In response to the question: “Do you bring your work home?” only a small number of informants (3 of 17, or 17.6%) said they brought their work home with them. The majority of those who responded to this question (8 of 17, 47.1%) believe that they only bring work home when it is absolutely necessary. The main reasons the informants decided to bring work home were to meet deadlines and prepare new projects. According to a senior doctor:

“It is not a problem for me to bring work home with me when I need to. I understand the importance of meeting deadlines and completing work on time, which can necessitate additional hours at the hospital or at home. For example, whenever I'm given new assignments, I always take them home with me so that I can finish them on time”

Another female informant only brings her job home to improve her medical practice knowledge:

“I do in the sense that I do my own research and reading on a regular basis, but not on a daily basis”

When it came to the border strength of time spent at home, 47 % (8 out of 17) of those interviewed said they completed their OV tasks while at home with family members. However, since the majority of the informants are families of grown children, they would need to schedule time to review and complete the OV tasks. The informants mentioned that they usually do it in their spare time while their children are sleeping or being cared for by their spouses or other family members.

“I'll do my OV work after my kids have gone to bed or are engaged in other activities, whether it's night or day”

Some of the informants mentioned that due to the busy work schedules, they had to bring their OV work home and finish it at night or on weekends.

“...I have to allocate time after work hours, such as at night at home. It's impossible for me to stay in the hospital; it's too difficult. Because my children have grown up, it would be fine if I stayed at home”

Even after a long day at work, the informants preferred to complete the OV tasks at home with their children and family. Just a few of the informants interviewed said that they integrate work and family time because they do not see it as a disruption. According to one informant:

“Since my volunteer work is done at home, I don't really make a separation between work and family time. I jumbled it up a little... I'll do it when my kids are sleeping or engaged with anything else that will distract their attention away from me. While I focus on my OV work, my wife will sometimes take them to playgrounds or shopping malls”

In terms of space, the majority of the informants who completed their OV tasks at home did not allocate any specific rooms for doing so. Since they are using mobile devices, the majority of them said that they are able to complete their tasks from anywhere in the house. One female informant, for example, stated:

“I did the majority of my OV work on my iPad, which allows me to work from anywhere at home”

4.6 Summary of the Chapter

The findings of doctors volunteering online via DB VHC in balancing work and family life were included in the study. This chapter begins by describing the DB VHC's background and the demographics of the informants, including their work and family backgrounds. The following part of the chapter discusses the findings of the first research questions, which are related to the role of online volunteering doctors in attaining work-family balance. The findings suggest that the nature of doctors' jobs in health-care settings has an influence on central participation and work-family balance among doctors who volunteer online. The final part of the chapter explains the findings regarding how doctors who volunteer online manage their work and family lives, as well as the borders between them, in order to attain balance. The border's characteristics, such as permeability, flexibility, blending, and strength, are discussed in depth. The findings show that informants can segment or integrate the work-family border when they volunteer online in their favorable way.

In general, doctors' central participation in work is expected to have an influence on the balancing process as well as individual preferences for segmentation or integration strategies. Adding another role, such as an online volunteer, may present an incredibly difficult situation for certain individuals, blurring the boundaries between work and family; however, when the role is properly managed, it may facilitate individual mobility between the various domains, allowing for a more balanced life.

CHAPTER FIVE

DISCUSSIONS AND CONTRIBUTIONS

5.1 Introduction

This final chapter synthesizes the entire thesis, bringing together the main themes emerged from the study. The first section delves into the informants' demographic backgrounds as well as their responses to the factors that influence their willingness to volunteer online. The informant background is presented in section 5.2, followed by discussions of the findings in light of the research questions in sections 5.3 and 5.4. Following that, the study's theoretical and practical contributions are identified. Finally, the study's limitations and suggestions for future research are addressed.

5.2 Discussion on Informants' Background

Work-family balance strategies, policies, and environments that promote doctors to volunteer can be informed by assessing the informants' work and family backgrounds, as well as the motivation of the volunteer doctor. The next sub-section discusses the work and family background of the informant, as well as the motive for volunteering in the virtual health community.

5.2.1 Background of Informants' Work and Family

As previously mentioned (see section 4.2), 17 doctors from DoktorBudak.com were selected as informants in this study. On average, the doctors participating in this study were in their middle adulthood (40-65 years old) a period in which, according to Van den Broeck, Poels and Walrave (2015), individuals in this stage of life have a busy schedule, segregating a considerable amount of time between family life and work.

Overall, the results suggest that doctors who volunteer online as middle-aged adults are more satisfied with their workload, professional development, status, and autonomy, as well as having more control and flexibility in their regular work-family lives. As a result, doctors are able to handle various aspects of their lives, such as online volunteering while working. This is supported by the findings of Ab Rahman et al. (2019), who found that senior doctors are generally more skilled and prefer to use their work environment to translate to a higher rate of fulfilment.

Moreover, since the majority of the informants were female doctors, the results may differ from those of other professions and genders in terms of roles, experience, beliefs, and work-family strategies. According to Bering et al. (2018) and Dousin, Collins and Kler (2021), juggling multiple roles required female doctors to be responsible for both professional and family duties, resulting in physical and emotional exhaustion, and they were more likely to experience burnout. Burnout can be caused by a variety of factors, the majority of which are related to the working environment in the hospital. A study in the United Kingdom (Rich et al., 2016) showed that doctors are overstressed and have a poor work-life balance; however, only about a quarter of Malaysian doctors reported similar findings (Ab Rahman et al., 2019). Such differences may be due to differences in healthcare environments and job content across countries, though Malaysian doctors' greater acceptance of high workload and ability to handle work-related pressure could also be evidenced. The findings suggest that most doctors find meaning in their work since they reported a sustained sense of satisfaction, a better sense of meaning with the intrinsic reward, and a respectable job.

This study also shows that all of the informants were in a dual-career marriage. Both spouses maintain their professional and personal responsibilities in a dual-career family. Married life is believed to provide extra emotional and physical support, suggesting that doctors with a family and a partner are more prepared to prevent burnout. This is based on a study by Ohlsson-Wijk, Branden and Duvander (2018), who discovered that being in a dual-career marriage has little effect on respondents' ability to participate in a range of life roles. According to their study, this trend indicates that personal values and willingness to combine other roles have never been in conflict as long as relationship equality is attained. Individuals, on the other hand, are exposed to negative effects if situations are not properly maintained, since they must integrate work and home life (Pal, Sinha, & Pathak, 2020).

In terms of informants work background, doctors in this study work an average of 50 hours a week, including normal and on-call hours. These formal allocated hours do not include the hours they spend doing other activities in life, such as volunteering online. This is significantly higher than the standard outlined by a latest study (Iacovoiu, 2020), which showed that doctors' workloads are considered acceptable and practical in several European countries since they work less hours (less than 36.2 hours a week). In contrast, doctor job satisfaction in Malaysia is higher than in most European countries (Ab Rahman et al., 2019). Due to differences in demand, duties, and culture, it is possible to conclude that doctor norms differ across different.

There is also evidence suggesting that religious guidance differences might be at play. Recent studies have shown that religious beliefs have a significant impact on achieving work-family balance (Arifeen & Gatrell, 2020; Hassan, Tnay, Yososudarmo, & Sabil,

2020). A study of Muslim professional women in the United Kingdom reported that their belief binds them in seeking a delicate balance between work and family (Arifeen & Gatrell, 2020). In the field of healthcare, satisfying patient needs is often linked to internal intrinsic spirituality, and a doctor's role could, in principle, motivate them to do so. As a result, doctors may place high value on relationships that tie them to specific belief values than other expectations, and they will establish 'ethical selves' to address the work-family balance. Despite the fact that doctors in this study work long hours and it may seem difficult to achieve a better work-life balance, almost all of the doctors in this study enjoyed their work and saw it as beneficial to them, allowing them to engage in other aspects of life. Incorporating policies and practices such as flextime, on the other hand, can help doctors achieve a meaningful balance between work and family life.

5.2.2 Background of the Involvement on DB Virtual Health Community

This section discusses the factors that influence doctors' willingness to volunteer online. The findings revealed four main motivational themes that influence online volunteerism: ICT related factors, knowledge sharing, peers influence and reward. These results suggest that it is important to explore and understand the doctors' motivations for volunteering online, as the blending of offline and online life may provide some insight into how they juggle work and family life in order to achieve a sense of balance.

i. *ICT related factors*

Motivation is, surprisingly, a necessary but insufficient condition for participation. Some other factors may help to encourage doctor participation as an online volunteer. Given the unique environment of the virtual community, it is expected that the ease of use and usefulness of communication in virtual communities would encourage online volunteer doctors to participate. According to the results, doctors reported that perceived ease of use and perceived usefulness had a significant impact on their decision to volunteer online. Furthermore, these features allow them to control and manage technology for both work and personal use.

There is evidence that using ICT at work increases an employee's flexibility; however, it can disturb work-life balance, particularly for employees who have a strong preference for integration (Cijan et al., 2019; Wang et al., 2019). In contrast to that research, this study shows that doctors have shaped the need for them to volunteer on an online platform, as evidenced by a variety of flexible work tactics that enable them to continue to engage online. In contrast to younger users, the findings of the study confirmed previous research that middle-aged professionals are willing to interact frequently with social media platforms in order to develop connections with family and friends (Jung & Sundar, 2020; Mischer, 2018). This points to the fact that, owing to the changing interaction and relationship of social networking platforms, doctors have a great opportunity to participate in online volunteering activities using technology's unique features.

ii. Knowledge sharing

Other factors include knowledge sharing. The majority of the doctors interviewed considered their role in the VHC was beneficial to society. They gained a deeper understanding of their own value as individuals, as well as a greater sense of identity and self-respect, by sharing knowledge and contributing to society. Doctors' volunteer online role can be interpreted as mediators of empowering systems, as they share up-to-date information, acknowledge misunderstandings about health issues, raise awareness, and encourage collaborative relationships between doctors and society. In this sense, online doctor volunteers assist VHC users in improving their health and shaping their ability to dynamically organize the well-being of those they care about, acquire accurate information, and better manage healthcare services.

The involvement of doctors as mediators, as shown by this study, promotes satisfaction outcomes for patients as well as many other users, which is consistent with the findings of researchers investigating into the role of doctors in VHCs (Atanasova et al., 2017; Panahi, Watson, & Partridge, 2016). Furthermore, according to Chen et al. (2020), knowledge sharing activity in online platforms is one of the most important factors affecting the adoption of information systems (IS). The remarkable success of VHC will help to ensure that a patient-doctor relationship lasts. As a result, doctors who are willing to share their experience with patients would be better prepared to serve them on online platforms. Furthermore, participation in social activities, according to Atanasova et al. (2017), enhances personal emotions, which are often expressed in a greater level of psychological participation (Minkler et al., 2001; Wang

& Fesenmaier, 2003). This may explain why some doctors are able to balance work and family life psychologically.

iii. Peers influence

This study also discovered that doctor's social circles, such as colleagues and former classmates, have a stronger influence on their willingness to volunteer online. If their colleagues are taking part or have volunteered in the past, they are more likely to be personally engaged in online volunteering. These outcomes are in accordance with social influence theory which proposes that individual's actions are always shaped by others, either consciously or unconsciously (Cialdini & Goldstein, 2004) especially those with common interests. The extent of influence a colleague has on others is usually determined with how "connected" the individuals to their social group (Hou, Qian, & Zhang, 2020). Research on the factors that affect a doctor's involvement in an online medical forum in Taiwan proposed that peer influence is the fifth most significant factor (Lin, Lai, & Yang, 2016). In the organizational context, in order to interact with each other and accepted as part of the group, peers' influence play important motive that reflect the need to have a good relationship with co-workers (Rahim & Daud, 2012). Moreover, according to Zhang et al. (2014), individuals are more likely to develop their personalities as members of a social group mainly based on personal or collective identity, suggesting that they use social identification and totally agreed characteristics to identify themselves as members of a particular group. Individuals can internalize expectations of what it means to be an online volunteer when a society encourages it, according to Hou, Qian and Zhang (2020). This

influences their future decisions and actions, including how they manage work and family environments.

iv. *Reward*

Together with the three factors discussed, the results of this study show that a doctor's decision to volunteer online is influenced by two types of intrinsic reward: personal enjoyment and religious motivation. The doctors perceive online volunteering as a source of personal enjoyment with a significant intrinsic reward, which motivates them to continue to support the virtual health community. Intrinsic reward is described as the enjoyment and fulfilment derived from simply carrying out one's daily activities. The results are consistent with Fang and Zhang's (2019) empirical study, which showed that enjoying supporting others has an effect on online community participation. This type of reward could be more economically sustainable for the virtual community, given that doctors benefit from sharing their knowledge in the virtual community. It has been proven that whether a person believes their actions will result in personal rewards (such as social benefits) determines how much they contribute to a society (Welbourne, Blanchard, & Wadsworth, 2013).

Furthermore, the study show that the influence of religion and faith on an individual's actions is one of the predictors of a doctor's willingness to volunteer online. Most religions are believed to encourage members to help one another and cooperate. According to some studies (Gallant, 2011; Sallam et al., 2018) religious presence is linked to volunteering that supports religious beliefs and practices.

5.3 The Discussion on the Possibilities of Online Volunteering Doctors to Balance Work and Family

According to the findings of this study, doctors who volunteer online in a virtual health community (VHC) can be considered "**central participants**" in the domain that they accepted in order to attain work-life balance. Doctors are regarded as a unique group of online volunteers, because they possess certain qualities that enable them to adjust domains and borders collectively. Individual factors (e.g., attitudes, life stage, career achievement, etc.) or organizational factors (e.g., culture, nature) could be linked to these qualities. The role they played can enable them to manage their work and families, as well as OV work, in their own way, and place a high emphasis on work-family balance, as opposed to "**peripheral participants**," who are unable to satisfy different domains in their lives in the same way.

5.3.1 Central Participant

In this study, doctors who volunteer online have a strong work orientation and are able to handle multiple domains and borders to meet their needs (e.g., work, family, and online volunteering work). The effect of satisfaction on other commitments in life, such as volunteering online, grows as the level of identification with the work-family domains increases. Doctors have strong role in delineating the work and family domains and organize their online volunteering (OV) work in order to avoid conflicts. The increased autonomy in work (e.g., flexible schedule, superior support) allowed doctors volunteering online to engage in informal work related to family or OV work. Employees with high job autonomy are expected to have better work-family balance

because they have the freedom to handle their time and work, according to Walia (2014).

This is one of the aspect of having a role as central participant in a domain, according to Clark (2000). The nature of work, in which the strong border work setting allows virtually no interruption from family into work, influences the centrality of the work domain in informants' lives. The results of the study are confirmed by previous work by (Kang, 2016), which suggests the importance of selecting a suitable range of volunteer characteristics. In order to drive greater volunteer engagement, it is critical to establish a positive volunteer identity.

Despite the fact that doctors volunteering online function in an impermeable and inflexible work domain and border, which is commonly measured by long work hours and irregular hours presence (such as on-call hours, shift hours, and virtual presence), they are able to positively construct the border around them based on their specific situations. Conversely, according to Bavafa and Terwiesch (2019), doctors who use information and communication technology (ICT) for an online visit patient system (also known as e-visit) suffer from lack of work-life balance because the technology has increased their workload and prioritized work commitment.

Furthermore, doctors' online identities are strongly linked to the domains in which they participate, giving them a greater sense of control over the borders of work-family domains and shaping them in a way that allows them to succeed. They discuss their needs in terms of household sharing, childcare tasks, and shift or on-call hours by

sharing the domain values with individuals around them (known as border-keepers), such as spouses, parents, coworkers, and superiors. The ability of doctors volunteering online to navigate domains and borders is influenced by the support they receive from those around them. According to Karassvidou and Glaveli (2015), border-keepers play an important role in allowing border crossers to achieve balance by reducing work-family conflict or vice versa. In addition, Kramer and Danielson, (2017) reported that through communication with superiors and peers, volunteers were satisfied and acknowledged their roles, which is consistent with the findings of this study.

Again, doctors who volunteer online have internalized the work-family values and demonstrated ability to perform both domains' activities while still volunteering online. Accordingly, the negative effects of volunteering online on their work and family life can be viewed as a satisfactory trade because they have the authority to compromise and adjust the domains and their borders. Such doctors are more likely to represent the aspect of central participation, which is critical in achieving a better sense of work-family balance.

In this study, doctors volunteering online carry out their online volunteering works at non-specific time, based on their availability, unaffected by other work tasks and without neglecting their main responsibility in the hospital. The flexibility and convenience of mobile devices such as smartphones, readily available Wi-Fi, and other technological advancements provide informants with a range of options for separating work and family life. They are given the freedom to schedule their work, family, and online volunteer work around their preferred strategies. They can do their online

volunteering work while on the go, during their lunch break, or while at home with their families.

The central participant did not choose segmentation as a coping strategy for maintaining a work-family balance, instead opting for integration. However, unfulfilled requirements (e.g., not having completed fellowship studies in the related sub-specialty) and transitions in the doctor's life stage (e.g., growing children into teenagers) have caused them to reorganize their priorities and reexamine their central participant in the dominant work domain.

Overall, the study revealed that being a central participant and having a high level of identification with the domain led to greater satisfaction with other life commitments. It appeared that OV's motivation and dynamic engagement with the VHC as a central participant was particularly important. Similarly, when OV identified with the VHC, they had a greater impact on achieving balance in their various life domains.

5.3.2 Peripheral Participant

Despite the fact that the majority of doctors volunteering online were able to combine work and family life, a minority of doctors in this study struggled to find a well-balanced strategy in all domains. The evidence in this study demonstrated that findings on the effect of ICT usage by employees in other countries (Bavafa & Terwiesch, 2019; Schlachter et al., 2018) can be extended to the Malaysian setting since doctors are constantly attached to their profession and thus unable to take time off from work.

Whereby, not only professional commitments, but also family obligations have become a major concern for doctors when it comes to juggling work and family life. This is because, family obligations and commitment are extremely important.

According to Clark (2000), "peripheral participants" are those that have less influence within the domain because they have disregarded domain values, have not attained full competence in their responsibilities, and do not necessarily communicate with other domain members. Doctors participating in this study are juggling successful careers with a fulfilled family and personal life, posing a challenge to their involvement in both the work and family domains. Changes in career (e.g., moving to the private sector, at the peak of one's career) or life phases (e.g., families with young children, parenting a special needs child, miscommunication with spouse) have dramatically shifted the work-family balance, according to the results of this study. Informants viewed focusing on family as highly valued at some life stages, such as when career goals have been met. In some cases, parenthood motivates doctors to reevaluate their priorities in life, resulting in a higher level of involvement in the family domain than in other domains. This study also discovered that border-keepers (e.g., spouses) and other domain members (e.g., children) restrict minority of doctors volunteering online in their choice of work-family balance process.

These results reflect findings of other authors who propose that women doctors who engage stronger in family demonstrate lack of work-family balance due to combined burdens of managing work and family responsibilities (e.g., Karassvidou & Glaveli, 2015; Rich et al., 2016). This study provide support that doctors volunteering online

need to function and communicate together with other domain members to manage the domains. Domain members as well play important role in assisting border-crossers (doctors volunteering online) to handle the domains by providing support needed. This is consistent with Alias (2021) and Zainal's (2020) studies, which concluded that social support from superiors and families greatly mediated the effect between work interference family and family interference work. Eventually, all parties' support will act as a buffer against the pressures of both work and family life.

5.4 The Discussion on How Doctors Balance Between their Work and Family while Volunteering Online in a Virtual Health Community

Apart from the individual's participation in a domain, another main factor that influence the achievement of work-family balance is the strength of the border between work and family domains. According to the findings and analysis, doctors who volunteer online choose integration as a boundary strategy for managing their work and family lives. When it comes to achieving work-family balance, the use of ICT tools allows for greater coordination between work and family. More specifically, doctors who volunteered online used a variety of strategies, including (1) leveraging ICT, (2) adjusting time management, (3) utilizing other people and (4) prioritizing to adjust the work and family boundaries. Thus, the findings of the study clearly show that these strategies were effective in reducing the negative effects of conflicts in both the work and family domains, and that they would certainly allow doctors volunteering online to live a balanced life. Prior to discussing the detail strategies used by doctors volunteering online, the characteristics of permeable, flexible, blending, and strength of borders are discussed.

5.4.1 Permeability

Permeability is where elements from other domains may enter into another domain. The permeability of work and family boundaries for doctors volunteering online has increased with the advent of ICT such as smartphones and wireless Internet, as work and family are no longer restricted to any particular areas (physical) or times (temporal). Even though ICT facilitates their physical, temporal, or psychological permeations, particularly as OV, this permeability is often perceived as a source of distraction or interference, particularly when informants are at work and have little control over the placement of work and non-work boundaries.

Furthermore, considering the nature of their jobs, doctors volunteering online saw the physical and psychological borders at work as less permeable, placing space limitations and allowing other matters (e.g., OV work, personal matters) to enter the workplace. On the other hand, as doctors worked from home, the permeability of the borders was discovered to expand traditional working times and areas so they could choose when, where, and what to think with the support of ICT tools, resulting in a lack of time and difficulties coping with their daily lives. As a consequence, in the medical field, it is difficult to draw a distinction between work and family life. This result supported the findings of Atanasova, Kamin and Petric (2017), who found that doctors shape and co-create how they allow for work-family integrations, necessitating them to strategize ways to best handle work-family since they are available at all times. ICTs affect border permeability when work and family activities are performed in the home domain, according to another study (Ghislieri et al., 2017).

This study's findings also suggest that using ICTs for online volunteering has diminished temporal boundaries, allowing informants to better control their environment in terms of when and where they perform their OV activities. For example, some people prefer to do their OV work at the office (at a specified time), while others prefer to do it at home. According to the study, ICT usage has increased border permeability among doctors volunteering online since these technologies provide a variety of ways to access OV works at any time and from anywhere. Even though ICT allows informants to perform OV tasks more easily, the borders at work are less permeable than in the family domain.

5.4.2 Flexibility

The results revealed that doctors who volunteer online and use ICTs to perform OV work at home or during working hours view their work and family borders as flexible. Informants virtually complete any OV task or assignment at any time (depends on the informant's convenience but does not apply to any specific time period or location) through the website or the DoktorBudak (DB) social media sites. The results also suggested that low flexibility and high permeability of work and family borders, rather than ICT use at home, had much stronger influences on increasing work-family conflict and technostress (especially techno-invasion).

In terms of temporal flexibility at work, informants stated that flexibility in working hours where they can choose the timing of their work did not secure their time with family because the high demand and expectation of the work surpassed other responsibilities. For most informants, since they have to attend to urgent and

emergency callings during unusual hours, family times and OV work has to be adjusted around the work schedule. The informants clarified that online volunteering work was completed in a range of settings, including at work (e.g., during break time), at home, and after working hours (e.g., while driving back home, over the weekend). Employees must have a flexible surrounding and appropriate family support in order to maintain a healthy work-family balance.

5.4.3 Blending

Blending occurs when a great deal of permeability and flexibility occurs. Blending ensures that the area around the presumptive border is no longer exclusive to one domain or the other, but rather blends both work and family, resulting in a border land that cannot be solely referred to as one. Blending may also occur when an individual applies their personal or family experience to their work or uses their work experience to enrich their home, resulting in integration or a sense of wholeness.

In this study, spatial and temporal blending take place when great level of border permeability shaping a 'no-man's island', such as when a living room table is used to performed the OV work. When it came to segmenting or integrating their work and family domains, the informants used a variety of strategies. Most of the informants were more satisfied when they integrate and combine their work-family lives especially when the use of ICT tools such as smartphones facilitate the process of integrating multiple domains. Informants who applied segmentation in managing their work-family boundaries were more committed and satisfied when they segmented their other non-work from entering their workplace, but once they are off from the

work domain, they prefer to combine their non-work matter and feel more committed and satisfied within the domain.

5.4.4 Strength

Doctors volunteering online experience frequent role blurring owing to the weak borders that existed in their work and family lives. The borders are tremendously porous making work-family intrusion among doctors in both direction either work to family or family to work. According to Kreiner et al. (2009), this occurrence is termed as 'allowing differential permeability'. The informants' work obligations and their strong desire to be treat patients more generate their prioritization of work over family or other non-work tasks such as online volunteering, resulting in very weak borders. Researchers hence disputed that weak borders are open to influence and are susceptible to integrate different life domains since flexibility and permeability occur in the border space (Ashforth et al., 2000; Clark, 2000; Kreiner et al., 2009). Doctors volunteering online normally honor and change their consideration principally to the work domain as it is a central element in doctor-patient communication, and they have a tendency to travel with the work sphere everywhere they go. This is consistent with the border theory belief that individuals often act dynamically to shape the work-family boundary to attain a proper balance life (Ashforth et al., 2000; Clark, 2000). Doctors volunteering online do not differentiate between the two domains. Therefore, work activities (including OV works) occur in the family domain and family activities also sometimes may take place in the work domain.

The attainment of satisfactory work-family equilibrium are subject to individuals' preferences for boundaries because individuals vary in the degree to which they separate their work life from family life. Moreover, the creation of boundaries by individuals is a matter of subjective preference (Rothbard et al., 2005). The findings indicate that doctors volunteering online preferences for domain role integration is enriched by the ICT, such as smartphones, Wi-Fi connections, etc. which permit them to move around and attend to their work and non-work activities.

As mentioned, when doctors volunteer online, the physical and temporal border has deteriorated. According to Kossek, Ruderman, Braddy and Hannum, (2012), the way individuals demarcate the borders is depending on factors such as the work role identification, the nature of job, flexibility of workplace policies, the family condition as well as the sense of control toward their work and the borders. This study identified two main boundary styles embraced by doctors volunteering online; those who prefers to integrate work and non-work (including OV work) and those who separate them by putting work or family first. Within these two styles, the study revealed that some of the doctors volunteering online were comfortable with their boundary approaches, and some of them could not feel in control of them.

5.5 The Strategies Used by Doctors Volunteering Online in attaining Work-Family Balance

This study discovered that doctors who volunteer online use a range of strategies to create boundaries between work and family in order to attain work-family balance, which revolve around diversifying, managing, and adjusting their resources. In

specific, four different strategies were used, including leveraging ICT, adjusting time management, utilizing other people and prioritizing.

Strategy 1: Leveraging ICT

Doctors volunteering online, whether at home or at work, take advantage of the unique features of ICT, such as mobility, ubiquity, and availability, to assist them in performing their OV work and managing work-family activities at no specific location or time. This strategy exemplifies how ICT has become an integral part of completing everyday activities in all domains. As a result, technology has enabled them to enter a new 'zone' in which they feel more capable of handling and managing their hectic work and family lives. Similar boundary work strategies using technology were discovered in studies by Fleck, Cox and Robison (2015) and Lirio (2017), in which individuals use the features of multiple mobile devices to help them manage their work-family balance that suits them.

Despite the fact that the nature of the workplace does not allow for much private space for doctors to perform their OV work, having ICT on hand provides them the freedom to perform OV work in a variety of settings, be it location or time, more effectively. Thus, the ICT that previously confined some work tasks to particular location and time has forced doctors to integrate work and family responsibilities to be performed anywhere any time. Some of the informants, for example, used ICT to designate specific rooms for performing work-related tasks, while others do it whenever and wherever they want.

Strategy 2: Adjusting Time Management

As doctors is replete with demands in terms of work hours and demands, organizing the time become critical as the job did not secure time with family members. Additional roles as OV require them to manage time with family and other personal activities (such as OV work), as ICT keeps work matters continuously important and accessible at all times. Adjusting time management among doctors who volunteer online can be interpreted as planning, which facilitates them in achieving work-family balance. Several arrangements are made to ensure that all job and family plans are met, including scheduling family and other commitment time in between work hours, optimizing break hours at work, outsourcing housework to a third party, and 'banking' time from one domain to be used later. If an informant was expected to be on call over the weekend, for example, they would "bank" time by taking time off later.

Therefore, according to Barber and Jenkins (2014), employees volunteering online who are able to control their use of ICT and manage their time and boundaries effectively can achieve work-family balance. The informants in this study also established some form of temporal balance to ease the suffering of those in the other domain, by assuring them that they would not have to work on certain days. The findings are consistent with previous research by Kreiner, Hollensbe and Sheep (2009), which found that priests effectively manage their schedule to reduce work-family boundary violations.

Strategy 3: Utilizing Other People

Other people which are being used are people close to the informant who they can depend on and who may have an impact on individual work-family boundary crossing. They can include spouses, parents, colleagues, friends, superiors, and others from the workplace or family. Besides concentrating on the individual himself, past research (Kreiner, Hollensbe, & Sheep, 2009; Mickel, 2019) has contended that other people (such as mentors) also may affect how individual negotiate the work-family boundary. Specifically, findings from this study have indicated that other people, or known as the 'border-keepers' (Clark, 2000) in informant's lives have great influence in helping and supporting informants to juggle work, family and OV work.

Researcher found that the availability and assistance of others is important in reducing work-family issues caused by work stress or other problems encountered in life, thus increasing work-family balance. Family members (such as a husband or wife) may provide a variety of supports ranging from emotional to physical support (e.g., look after children for temporary). The findings of this study is supported by the work of Mustapa, Noor and Mutalib (2018) who stressed that work and family social support is the central resources that help individuals to attain balance and engage in multiple roles.

Furthermore, superiors and colleagues play an important role in facilitating or preventing doctors volunteering online from crossing borders because they could or could not provide the desired support to their subordinates or colleagues from taking benefits including paid leave policies to participate in online volunteering work (e.g.,

road tour, attending TV or radio slot awareness programs). As such, superiors may interpret or even change regulations to help doctor's volunteer online (Wang et al., 2019).

Aside from that, since some of the doctors participating in this study are non-dual-doctors, they can communicate their boundaries and integration or segmentation strategies (Kossek, 2016) to others, such as their spouses, so that their styles can be adjusted. Doctors may communicate their expectations about their time management and activities related to their OV work to family members or superiors. Such interaction will help them understand the extra domain duties that doctors volunteer online and, as a result, minimize conflict (Wang et al., 2019).

Strategy 4: Prioritizing

An essential part of the modern work-family struggle is to manage multiple simultaneous demands and roles (Hirschi, Shockley, & Zacher, 2019). In a typical doctor work setting, they are often expected to respond to patient needs with urgency and unpredictability, work long hours, work on weekends and nights (during on-call), or meet deadlines. Similarly, family needs are often pressing and important, such as when children become ill.

When both domains are important and challenging, doctors volunteering online must decide which one takes priority. The results of this study showed that doctors prioritize work and family demands by making the right decisions on which issues are the most important to pursue and which can be postponed for the time being. Interestingly, the

majority of the doctors who volunteered online in this study put work ahead of families, suggesting that their work setting encourages them to do so. This implies that achieving work-family balance can present challenges, such as making tradeoffs between the two domains. A doctor, for example, can choose to reschedule time with family in order to respond immediately to work-related duties. This is consistent with Rich et al. (2016) findings that doctors are expected to prioritize their work over their families, resulting in a lack of balance in their lives, especially among women.

Of all the strategies presented by doctors volunteering online in attaining work-family balance, it is suggested that information and communication technologies (ICTs) have a significant effect on shaping doctors volunteering online perceptions of the border dimensions in terms of work-family balance.

5.6 Theoretical Contributions

This study aims to make two theoretical contributions. The main theoretical contribution is the conceptualization of the cyber domain in the virtual community into a framework that highlights the gaps in existing literature on work-family and ICT developments. Sue Clark Campbell's (2000) work-family Border theory is insufficient to explain the full dynamic of online volunteers' engagement in achieving desired sense of balance. According to this study, a third domain named "cyber" emerges alongside the traditional work-family domains as the work-family border theory is applied to information systems (IS) and emerging technologies. This study would fill in gaps in the literature by integrating the cyber domain into the work-life domain analysis, exposing a new field of investigation that goes beyond the main focus on

work and family subjects. Indeed, this study will help to extend Border Theory by highlighting the neglected relationship between work-family and the cyber world, as well as its work-life balance. The conceptual framework has a unique feature that was produced using extensive responses and opinions from doctors who volunteered online. Despite the fact that existing theories aimed at achieving work-family balance by employee volunteering online were still unavailable, they have expressed their thoughts, insights, passions, and engagements as doctors volunteering online.

Second, this exploratory study revealed that there are gaps in understanding of online volunteerism in virtual communities, suggesting some possible research topics. Other researchers and practitioners may be motivated by these findings to dig deeper into this subject, fostering knowledge sharing among health professionals, especially in the area of virtual health communities. This will add to the body of knowledge currently available on the use of virtual health communities for knowledge sharing.

Third, the findings suggest that a better understanding of virtual borders is needed for integrating ICT into the work and family environment in order to achieve a better work-family balance, especially among individuals who volunteer on social media platforms. This provides guidance on the topics of individuals juggling several responsibilities in a virtual community. The conceptual framework improved on the border theory, in terms of how doctors may best enact work-family boundaries in their life setting as an online volunteer. Figure 5.1 depicts the proposed conceptual framework, which aims to improve the research area in general by providing a theoretical basis and direction for future research.

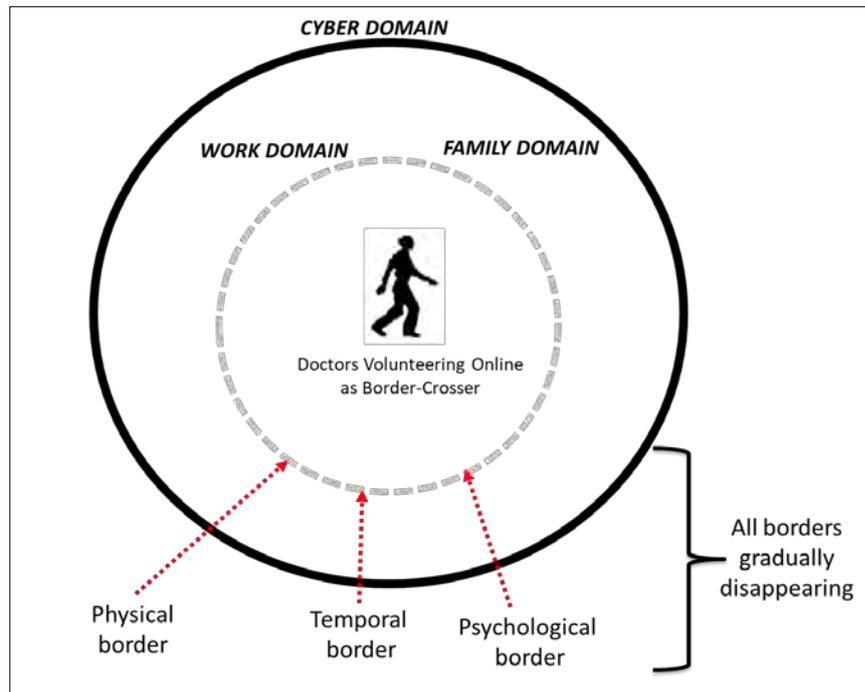


Figure 5.1 The Conceptual Framework of Doctors Volunteering Online in Attaining Work-Family Balance

5.7 Practical Contributions

This study has implications for practice. First, the findings of this study add to the body of knowledge in IS by providing researchers and practitioners with appropriate strategies for integrating Web 2.0 technologies into the virtual health environment in order to establish and strengthen successful virtual communication toward building more supportive environments comparable to those established by face-to-face interactions. This offers guidance on the various aspects of doctors' participation in a virtual environment as a way to assist them in making more informed practice decisions.

Apart from engaging doctors, the study reinforces the organization's rationale for developing virtual health communities as an alternative to traditional face-to-face consultation between doctors and patients, especially the Ministry of Health (MOH). In order to keep abreast with the fast changing technological environment, VHCs have the potential to deliver a powerful resource (Buultjens, Kozlowski, & Tucker, 2015; Huang, Chengalur-Smith, & Pinsonneault, 2019) that may strengthen current quality healthcare, especially in improving country financial resources (Ministry of Economic Affairs, 2018). Therefore, the MOH can play a key role in promoting and supporting the idea of online volunteering among doctors from various health care disciplines. The MOH, for example, may recommend reasonable incentive mechanisms for doctors who volunteer online to increase OV awareness and values.

Second, this study offers evidence-based guidance to those who volunteer online on how to establish effective strategies that can significantly enhance long-term success in the virtual health community environment. Organizations can acquire better insights into the strategy employed to deal with work and family by focusing on the merging of the cyber domain into the work and family domain. This can be accomplished by sharing the lessons learned from doctors volunteering online in the sense that it will benefit others and can be used to promote and assist others who wish to volunteer online. It will facilitate them in using IS technologies to create an effective plans or arrangements to uphold a work-family balance.

5.8 Limitations

The study was conducted with a number of limitations, ranging from the data collection, interview process, choosing the appropriate informants and the generalization of findings.

Getting the informants to agree to be interviewed was the most difficult part of this study. During the sampling process, it was discovered that doctors in medical fields are more unlikely to participate in the study, probably because a lack of time due to work commitments. WhatsApp was used as a communication tool with the informants in this study since it is widely used in everyday life for managing social activities. Despite the fact that WhatsApp appears to be one of the easiest method of gathering initial data, it tends to be difficult to obtain feedback because the scheduled date and time are constantly changing due to unexpected events (e.g., personal reasons and work related matters). In order to set up an interview schedule, the researcher must therefore follow up with the informants patiently.

The second limitation was in the interviewing process. Face-to-face interviews with informants were almost impossible due to irregular work hours. Alternatively, the majority of the interviews were conducted using a range of social media communication tools that were acceptable to both the informant and the researcher. However, due to informant obligations at work or at home, some interview sessions had to be rescheduled, and some had to be cancelled. It took nearly nine months to gather all of the data needed for the study.

Third, since reaching informants was difficult, two types of sampling techniques were used to ensure the right informants were chosen. Purposive sampling was used in the first stage, which required the DB founder's cooperation as a referral to identify informants that matched the researcher's characteristics through the DB WhatsApp group. However, referral contact was unable to effectively identify the informants that meet the specific characteristic, which posed some bias. The limitation may be due to the referral contact's time constraints, as she juggles many priorities and roles in her life. Some interested informants, for example, were not appropriate for recruitment since they were pediatrics related specialists such as Community Nutritionists and Speech Language Pathologists, instead of medical doctors. Since some of the basic questions were to expose the reality of a doctor's work burden, challenges of modern family life, and other conflicts in doctors' lives, this may have led to misunderstanding among interested members.

Fourth, the study was limited to a single virtual health community, DoktorBudak (DB), and all of the doctors were mainly pediatricians. Therefore, the researcher wishes for a mix of doctors from different specialties who can provide different perspectives on juggling work and family life by using ICT.

5.9 Suggestion for Future Research

A number of future research opportunities may be available based upon the findings. First, no attempt was made in this study to look at the people in the direct proximity of the informants. Others, especially their families and supervisors, had a significant impact on the informants' ability to maintain balance, according to the findings.

Indeed, this seems to suggest that work-family balance should not be solely a personal concern. Instead, people around them evolved and adjusted to meet the demands of work, making it easier for informants to navigate between domains on a daily basis while volunteering online. Since the experiences of those around the informant were filtered through the informant's explanations in this study, future studies will need to go into greater depth to obtain a better understanding of the process of maintaining work-family balance from the viewpoint of a family member (e.g., spouse, parent).

Second, as mentioned in the limitations, the findings in this study are constrained by the study's small sample size, which focuses on a single case study (involved one type of virtual health community of pediatrician). Hence, future research might consider a variety in case studies of virtual health communities or other virtual communities, such as virtual community of practice (VCoP), as suggested by Adisa, Gbadamosi, Mordi and Mordi (2019). This could reveal the dynamics of border management strategies among different groups of people in different settings.

Third, the findings of this study indicated that doctors who volunteer online choose to be central participants in the work or family domains, allowing them to achieve a better balance in their lives. Further research may look at other factors that may contribute individuals volunteering online to internalize the domains, such as organizational factors (like leadership style, organizational culture), individual factors (such as changes in life phase), or work-life management, since previous research on work-family balance has offered little information on these aspects.

Finally, future research should take a closer look at other types of professionals who volunteer online. This is because preliminary findings from this study found that doctors volunteer online for a number of reasons, including meeting social needs (by sharing knowledge and combating misinformation), which could reduce government health expenses to some extent. The type of government support needed to maximize the potential for volunteerism, in terms of incentives and coverage received, conducive scheme, or some other family-friendly policies that empower the public to engage more in community development and motivated by volunteer spirit, are some of the key questions that need to be addressed. This notion is in line with the Twelfth Malaysia Plan draught, which ran from 2021 to 2025 and focused on a number of issues including improving public service delivery, creating a more knowledgeable society, and improving citizens' well-being. Furthermore, Malaysia is entering the Fourth Industrial Revolution (IR 4.0), a period in which the voluntary sector, especially the online voluntary sector, is expected to play a key role in addressing future societal changes (Haldane, 2019). Thus, exploring how the government programmed volunteerism as an organized and integrated agenda in the building of a community, as well as how the government facilitated non-governmental organizations' efforts to generate competent online volunteers, will be beneficial.

5.10 Summary

The present study explored into the role of online volunteering doctors and their experiences in managing and negotiating the work-family border in order to achieve work-family balance. Since information and communication technology (ICT) can be viewed as a liberating power that allows people to juggle multiple demands, the way

work-family relationships are structured around ICT is vital to doctors volunteering online in their search for a fair balance.

Clark (2000)'s Border theory, which explores how individuals can achieve work-family balance, was considered when studying this issue. As the difference between virtual and real worlds blurs, border theory is best explained in the case of doctors volunteering online from the perspective of blending domains of work, family, and cyber into one single sphere. Existing borders (physical, temporal, and psychological) that separate work and family domains are no longer applicable for doctors volunteering online because the lines between the two domains have blurred. In accord with Border theory, doctors who volunteer online choose to be central participants in the domains involved and have established strategies to balance their job and family obligations. The majority of the informants in this study prefer integration as a strategy for balancing work and family life. The strategies identified include (1) leveraging ICT, (2) adjusting time management and (3) utilizing other people.

To summarize, doctors who volunteer online and want to achieve work-family balance face a difficult situation as it is so strongly linked to the organizational setting, individual characteristics, and work-family management. It is hoped that the conceptualization presented in this study would serve as a catalyst for further research into ICTs and online volunteering as tools for achieving work-family balance. Volunteering in virtual environments appears to be a great opportunity for doctors who may not be able to dedicate ample time to face-to-face interactions with patients and enjoy helping others, but there are still some challenges.

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Appendix A

Consent form

Interview information leaflet

This leaflet contains some information about the study. Please take a few minutes to read through it before beginning the interview.

Everything you tell me will be treated with the strictest of confidentiality





What is this study about?

I am interested in doctors who volunteer online through DoktorBudak virtual community and would like to hear from you about your decision to volunteer and your personal experiences in how you manage your work and family life to attain balance between your work and family.

Why are your views important?

In this study I want to learn about the experiences of online volunteer of doctors in balancing their work and family life satisfaction. Whilst taking part is unlikely to directly benefit you, it is hoped that taking part in this study will help others who still have time to volunteer online. If you are interested in the findings of this study, I can send you a summary once it is completed.

What do you have to do?

The interview will take roughly an hour and will take part during work or at a mutually convenient time. I will be recording the interview to make sure I have an accurate record of what is said. At the beginning of the session I will ask you to sign a consent form to show you agree to take part and be recorded.

What will the information be used for?

This interview is part of my PhD studentship. The information from the interviews as well as from the DoktorBudak Facebook will be studied and the findings will be used as my PhD, published in academic journals and presented to academics and policy makers.

Will the information you provide be kept confidential?

Yes. Neither your name nor any information that may identify you will be used, so that you remain anonymous. Only I and my supervisor at the UUM will have access to the tapes, questionnaires and related documents.

INTERVIEW CONSENT FORM



Assessing Work and Family Balance among Volunteered Doctors in a Health Virtual Community

The purpose of this form is to ensure that your contribution to the above research project is in strict accordance with your wishes.

I have read the information sheet that describes this study, and agree to take part in an individual interview.

I give permission for this interview to be recorded.

I understand that I do not need to answer all the questions if I do not wish to and that I may take a break or leave the interview at any time.

I am aware that any information I provide will be treated in the strictest of confidence. Tapes, transcripts and all related documents will be locked away and only available to the research team.

I give permission for brief extracts of what I say to be used for research purposes (including research publications and reports), with strict preservation of anonymity.

I understand that the interview will remain confidential and become the property of the UUM

Signed:

Date:

Name:

Address:

.....

Appendix B

Interview Protocols

Topics	Questions	Notes	Key References
Demographics	<ul style="list-style-type: none"> • Gender • Age • Marital Status • Race • Occupation, Position, Name of Organization • Phone number • E-mail 	<ul style="list-style-type: none"> • To understand the participant 	
Background about work and family	<ul style="list-style-type: none"> • Briefly describe your job (length of employment, hours a week do you normally work) • Can you choose your working hours? Can you describe how do you use the flexible working hours? • Do you usually look forward to going to work each day? Why? • Describe your family (who's there, how often, how much time spent together). If children: Where they are during the day, who picks them up, drops them off for day care, school, activities or play with friends? • Do you usually look forward to going home and being around with your family each day? Why? • Do you do any chores at home? Do you think of any of them as work? Why? • Do you have enough time for yourself – enough free time to do what you like? • Why do you think it is important to have time for yourself? 	<ul style="list-style-type: none"> • Job Characteristics • Flexibility – temporal border • Job Demand: Emotional demands • Work / family background 	<ul style="list-style-type: none"> • Nippert-Eng (2008) • Ramos et al. (2015)
Online volunteer work background	<ul style="list-style-type: none"> • Please tell me about your OV work (length of participation with DB, hours spend volunteering per week, when and where do you normally perform your OV activities? (Follow-up questions: If at home / in the office, can you describe your workplace while you are performing your OV activities) 	<ul style="list-style-type: none"> • Volunteering work / Work-related technology use 	<ul style="list-style-type: none"> • Erden, Von Krogh, & Kim (2012) • Janet (2000)

-
- Could you explain what prompted you to volunteer online?
 - Why have you chosen to volunteer online through the DB health virtual community?
 - Tell me about your passion in sharing knowledge with others through DB
 - Tell me about the ways in which you motivate yourself to volunteer online while having multiple commitment in your life
 - Do you think that the use of technology in general or social media/ health virtual community (HVC) in particular helpful in facilitating your work / OV work?
 - If so, how? (in terms of)
 - a. Sharing knowledge
 - b. Communicating with patients
 - c. Communicating or collaborate with other doctors / the hospital management
 - d. Because it provide a way for the doctors to provide patients with more feedback
 - e. Because it allow patients to participate more fully in managing their own healthcare
 - f. Others (please describe)
 - Do you use any other social media or virtual communities for other purpose?
 - What recommendation would you give to the hospital management/ government who are keen to encourage the effective use of technology especially for online volunteering work?
-

- Othman (2013)

- Work-related technology use

Work-family
border
management

- While you are at work, do you often think about your home, family and OV works?
- Is it possible for you to take care of your work activities while thinking about other things, like your family, OV tasks, running errands
- Would you say that most of your workload requires your undivided attention?
- Would you generally say that having to deal with family and personal-related matters such as OV has been a problem for you with this job, in particular? Why is that?
- Are you making personal calls during working hours?
- How flexible is your job in terms of allowing you to meet demands from outside of work? For example, are you able to schedule time away from work to deal with family issues or events happening in your personal life such as OV works?
- Do you bring your work home? Please specify (e.g., reading tasks, writing materials, other supplies)
- How often do you find yourself thinking about work while doing home-related things?

- Psychological border

- Role Blending

- Permeability

- Work flexibility-willingness

- Role Blending

- Clark (2000)
- Nippert-Eng (2008)
- Othman (2013)

	<ul style="list-style-type: none"> • As you volunteer online, how do you create a separation between your work and family life? Are you able to “switch off” from work during evenings and weekends? • What tactics do you use to maintain this separation? • Do you use any form of information communication technologies (ICT) to accommodate both work and non-work activities? For what purposes do you use it? • What influence do you think your use of ICT has on the interaction between your work and non-work activities? • Do you currently see yourself as someone who tries to keep work and personal roles separated most of the time? • Are there any special arrangements or strategies that you have not mentioned yet that enable you to balance your work and family life? • Do you have any comments about your ‘work-family balance’? In other words, how happy you are with the way you divide your life up between work and family while volunteering online? 	<ul style="list-style-type: none"> • Boundary permeability at home • Temporal border / Psychological border • Tactics used • Integration/segmentation preference • Tactics used • WFB
Work-family challenges	<ul style="list-style-type: none"> • Have you ever experienced any significant work-related stress or worries? Why do you think that is? • Do you ever experienced any significant home-related stress or worries? Why do you think that is? • Some people have a problem keeping work from infringing on their attention to family and non-work interests. Is this generally a problem for you? • What were the most difficult points in maintaining balance between your work and family when volunteering online? • What kinds of challenges did you face in juggling multiple demands in your life? Give an example of how you handled them • What are the challenges of using ICT in general and social media / HVC in particular to accommodate both work and non-work activities? 	<ul style="list-style-type: none"> • Work– life conflict / Work–life enrichment • Ramos et al. (2015) • Nippert-Eng (2008)

Appendix C

Member Checking Findings

Dear Respondent,

This is a copy of preliminary emerging findings based on the interviews done and some document analysis (e.g., from the DoktorBudak websites, online articles). Based on the findings, please feel free to answer the two questions below, as it will be used as a guide to validate part of the study findings.

- (1) Do you agree with the facts as they are reported?
- (2) Do you agree with the interpretations of these facts developed by the researcher?

I would take this opportunity to ask if there are any other questions that need further clarification.



FINDINGS OF THE STUDY

1. Details about the informants' backgrounds

Category		Number of Respondents (out of 17)
Gender	▪ Male	▪ 6
	▪ Female	▪ 11
Race	▪ Malay	▪ 12
	▪ Chinese	▪ 4
	▪ Indian	▪ 1
	▪ Others	▪ 0
Number of Children	▪ 0	▪ 3
	▪ 1-2	▪ 7
	▪ 3-4	▪ 4
	▪ 5-6	▪ 3
	▪ More than 6	▪ 0
Length of Employment (years)	▪ 6-10	▪ 2
	▪ 11-20	▪ 14
	▪ 21-25	▪ 0
	▪ 26-44	▪ 1
Practice Setting	▪ Public Hospital	▪ 12
	▪ Private Hospital	▪ 5

2. Findings from the informants' responses

Main Questions	Themes Identified	Explanation of the Themes
<p>Research Question 1:</p> <p>The role of online volunteering doctors in balancing work and family</p>	Central Participant	Refers to the extent to which informants have significant influence in delineating work and family domains and organizing their online volunteering (OV) work to achieve a work-family balance.
	Peripheral Participant	Refers to the extent to which respondents find difficulties in finding a well-balanced way in all of the domains covered
<p>Research Question 2:</p> <p>Strategies in attaining work-family balance</p>	Leveraging ICT	Refers to the use of technology (devices or applications) to create separation between home and work.
	Utilizing Other People	Refers to involving the help and assistance of others (e.g., a spouse, parents, or colleagues) to help manage work-family boundaries.
	Adjusting Time Management	Refers to the process of planning and managing time in order to balance work and family commitments.
Prioritizing	Refers to making a careful decision on which domain should be pursued first.	

Appendix D

Content Categories

Description of content analysis categories and its subcategories

Category	Subcategories	Descriptions
WFB Strategy	Flexible working hours	Work schedule that enables employees to set when they want to begin and end working on a work schedule.
	Time Management	Process of consciously planning and controlling the amount of time spent on specific activities in order to improve effectiveness, efficiency, and productivity.
Policy	Social media guideline	Health professionals must adhere to such social media policies.
	Flexible work system	The flexible hours model (shift system) for healthcare professionals
	MMC guidelines	The Medical Act of 1971 governs the laws that apply to Registered Medical Practitioners.
	Government plan for healthcare	The Malaysian government's plan to improve several aspects of healthcare by allocating public funds to healthcare development
Challenges	Multiple responsibilities	To juggle, organize, and deal with a range of roles and responsibilities
	Work burden	Increased workloads, longer hours, having to do more for less, and being under increased pressure to accomplish job-related tasks are all challenges at the workplace.
	Work - family pressure	When individuals encounter with conflicting demands between work and family responsibilities, it becomes more difficult to fulfil both roles.
	Work-life imbalance	Due to a simultaneous increase in work or commitments at home, it is difficult to achieve a successful work and life balance.

Appendix E

Thematic coding system



Themes for “Factors Doctors Volunteer Online”

Main category	Theme	Sub themes	Theme Definition	Example of quotes for each themes
Factors to Volunteer Online	Information and Communication Technology (ICT) related factors	Perceived usefulness	Statement that refers to the extent to which respondent belief that volunteering online through HVC is perceived as providing benefits to them in performing the OV activities.	Could you explain what prompted you to volunteer online? <i>“Can be on the go (on my mobile) or at my desk (on my PC)”</i>
		Perceived ease of use	Statement that suggest to the extent to which respondents believe that it is easy to use the ICT tools for volunteering purpose	<i>“First because online is easy, means you can access it while at home at work, you can actually do your volunteer work at home. So it doesn’t take much of my time, because it is very flexible. You can write your article whenever you want ...”</i>
	Knowledge sharing	Statement that refers to the transferring or disseminating health knowledge and experience by the respondent through interaction via HVC in order to empower the public and patients in making best health decision	<i>“I like to share things that I deal with every day at home. Erm, one of my topics on DoktorBudak was about colic ... I really want to share my experience”</i>	
	Peers influence	Statement that refers to DB founder or the co-founder who influenced the respondents to join the HVC and become part of the team as an online volunteer	<i>“Personally, I was approached by Dr. A because we used to work in the same hospital, and I’m no longer there. ... One of the things is that Dr. B is my school friends, so I knew him for a very long time... One of it is because I know these are people who are passionate about their work in this DB.”</i>	
	Rewards	Statements that suggest the rewards received by the respondents that keep them volunteering online while maintaining other commitment in their life	<i>“First is because of the ‘pahala’, reward I can get, for the life hereafter. It is platform for me to contribute”</i>	

Themes for “Challenges when Doctors Volunteer Online”

Main category	Theme	Sub themes	Theme Definition	Example of quotes for each themes
Challenges when Volunteer online	Work Problems		Statements that concern work-related problems particularly when volunteering online	What were the most difficult points in maintaining balance between your work and family when volunteering online? <i>"... because my work is like, I am being on-call like almost every day. So if I have patient in the ward, the staff will contact me directly. So, sometimes when I am at home then I get phone call and all that then I get distracted with work especially if I had difficult patients"</i>
	Time Conflicts		Statements that concern the time spent performing one role makes the respondents unavailable to allocate enough time to another role	<i>"My main challenge is time, not enough of it... When I'm busy with my work and tired from it, then it can be difficult to stay a bit late at night to do the OV work"</i>
	Deciding Priority		Statements suggest that passionate about job demands which has increased the likelihood to prioritize work over family	<i>"Challenges, is I think in overcoming priorities which one comes first. Conflicts arise when two or more tasks have to be done simultaneously. For example, you have a DB task and at the same time you have a job to complete. So, I give priority to my work first. But you'll have to reschedule the other job to get the higher priority work done"</i>
	Juggling Multiple Roles		Statements that propose managing multiple roles which results in role overload and were critical to manage	<i>"I find the challenges mainly involved in keeping the balance in managing multiple responsibilities at the same time, and managing expectations are equally difficult"</i>

Codes and Themes to Answer Research Question 1

Main category	Theme	Theme Definition	Example of quotes for each themes	Raw Codes
The role of online volunteering doctors in balancing work and family	Central participant *deductive (theme is guided from existing theoretical concepts)	Statements suggest that being a central participant gives a person more choices, and participant can easily manage the border and attained the balance between work and family domains	Some people have a problem keeping work from infringing on their attention to family and nonwork interests. Is this generally a problem for you? "... I regard my work not as a paid job, it's more of responsibility. So sometimes, if I have an incoming message or an incoming call, it takes a while for me to get away from my kids, so sometimes I let that happen. And I'm not necessarily guilty of that. I'm the type of person that's okay for people to call me for example, at night, during weekend, about something at work. Usually I have no problem about that ..."	<ul style="list-style-type: none"> • Sense of responsibility • Meaningful job • Enjoy the work • Motivation to balance life • Manage to cope • Supportive family members • Mediated role of ICT
			Do you currently see yourself as someone who tries to keep work and personal roles separated most of the time? "I believe work and ambition are an amalgamated roles. I need to be happy to do what I do. If not, I am gonna end up with burnt out in my field. It is a long-standing field... At times, I look myself if I am struck with an illness, will I be able to function outside the box ... so that I can maintain a sensible and 'humane' life..."	
			Do you usually look forward to going to work each day? Why? "... on most days I do enjoy going to work ... Because I do think my job is meaningful and I do feel my patients need me"	
			Do you have any comments about your 'work-family balance'? In other words, how happy you are with the way you divide your life up between work and family while volunteering online? "Being a doctor, of course, and then in sub-specialty program, and then living bit away from the hospital is a real challenge to me. But I have to take it as a motivation for me to become better. Then at the same time we want to make sure that we balance our family and our children. For me, even though we are a specialist in our work, we still have to balance family, career and volunteer work"	
		290		

Codes and Themes to Answer Research Question 1

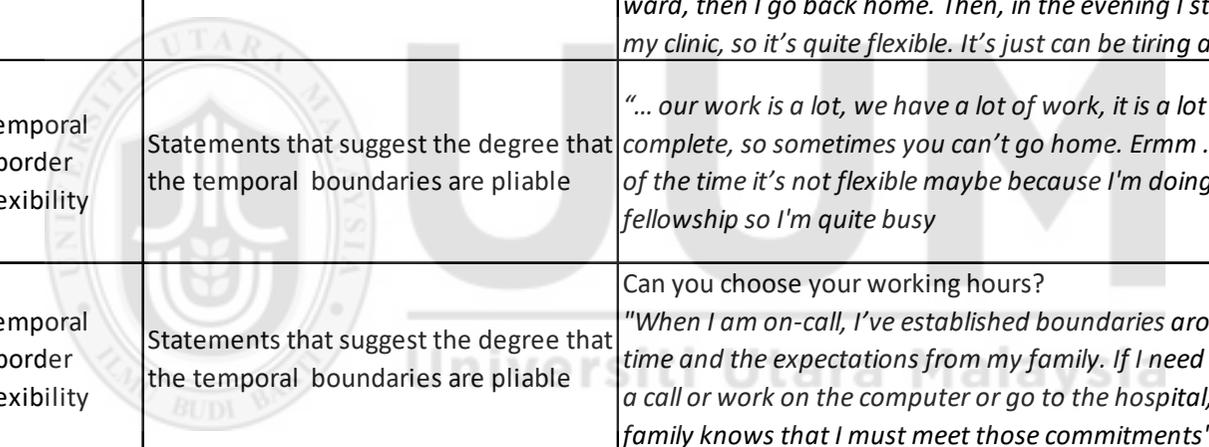
Main category	Theme	Theme Definition	Example of quotes for each themes	Raw Codes
The role of online volunteering doctors in balancing work and family	Peripheral participant *deductive (theme is guided by existing theoretical concepts)	Statements suggest that participants do not internalize the domain's characteristics, less competent and unable to control their domains well and more likely to experience work-family conflict	<p>Do you have any comments about your 'work-family balance'? In other words, how happy you are with the way you divide your life up between work and family while volunteering online?</p> <p><i>"It is not easy at all, in fact I think work is getting bigger while I know I will soon need to give more time for family when baby comes in July, and so I worry that the online volunteering will suffer"</i></p> <p><i>"Erm...it is not easy for sure. I think every job in the world, when you're a wise mother, you need to balance everything. But I still struggle because I keep changing job as I change my workplace, changing place to stay. So we've just moved from Sungai Buloh to Shah Alam, to Tanjung Malim, so it's all changing for everyone. Just moved on to a new job. So I'm still struggling, but I think I'm trying to adapt slowly. But I feel I need to put more effort into volunteering. Actually, I've got time, it's just that I don't feel it's my top priority. That's why it tends to be number five on my priority list, and that's why I'm like that"</i></p>	<ul style="list-style-type: none"> • Heavy workload • Work-family stress • Struggling to balance WF • Juggling multiple commitment • Difficulty of adapting new environment • Miscommunication
			<p>Do you have enough time for yourself – enough free time to do what you like?</p> <p><i>"Honestly ... at current stage of my career, I choose to prioritize my family and myself first"</i></p>	

Codes and Themes to Answer Research Question 2

Main category	Theme	Theme Definition	Example of quotes for each themes	Examples of Raw Codes
Border Permeability	Physical Permeability	Statements that refers to the degree to which a border allows physical aspects of one role or domain to enter another.	<p>Please tell me about your OV work (length of participation with DB, hours spend volunteering per week, when and where do you normally perform your OV activities? (If at home / in the office, can you describe your workplace while you are performing your OV activities)</p> <p><i>"I have specific room, separated at home for me to do my works, my OV works"</i></p> <p><i>"I usually work on it at home after work from my laptop. I rely on my home Internet for me to work on my OV tasks or any other related job, indirectly I can integrate my work and my life activities"</i></p>	<p>Border more permeable with ICT</p> <p>Border more permeable with ICT</p>
	Psychological Permeability	Statements that refers to the degree to which a border allows psychological aspects of one role or domain to enter another.	<p>Is it possible for you to take care of your work activities while thinking about other things, like your family, OV tasks, running errands?</p> <p><i>"It may affect our quality of work, erm ... I'm still thinking but the focus is more towards work"</i></p> <p><i>"Erm...yes I can. I don't think I have faced any problems. It's just sometimes, family wise, if there's someone sick, then I get distracted. But usually I'm ok with it"</i></p>	<p>Segement work and family</p> <p>Blended psychological</p>
	Temporal Permeability	Statements that refers to the degree to which a border allows temporal aspects of one role or domain to enter another.	<p>Are you making personal calls during working hours?</p> <p><i>"Yes, if urgent matters arises"</i></p> <p><i>"Please tell me about your OV work? Most of my OV work were done from my iPad, so I can be wherever I want be, to do my work at home"</i></p>	<p>Blended temporal border by leverage ICT</p>

Codes and Themes to Answer Research Question 2

Main category	Theme	Theme Definition	Example of quotes for each themes	Examples of Raw Codes
Border Flexibility	Physical border flexibility	Statements that suggest the degree that the spatial boundaries are pliable	Briefly describe your job (length of employment, hours a week do you normally work) <i>"... my work schedule is quite flexible at the moment, because I'm not working like 9 to 5. Like today my clinic is in the evening ... So, in the morning after I see patients at ward, then I go back home. Then, in the evening I started my clinic, so it's quite flexible. It's just can be tiring as well"</i>	Physical border flexible
	Temporal border flexibility	Statements that suggest the degree that the temporal boundaries are pliable	<i>"... our work is a lot, we have a lot of work, it is a lot to complete, so sometimes you can't go home. Ermm ... most of the time it's not flexible maybe because I'm doing fellowship so I'm quite busy"</i>	Temporal border inflexible
	Temporal border flexibility	Statements that suggest the degree that the temporal boundaries are pliable	Can you choose your working hours? <i>"When I am on-call, I've established boundaries around my time and the expectations from my family. If I need to take a call or work on the computer or go to the hospital, my family knows that I must meet those commitments"</i>	Manage Time
	Temporal border flexibility	Statements that suggest the degree that the temporal boundaries are pliable	Describe your family <i>"...So, I'm sending them off to my mom, who I'm also hiring a day maid, like they're coming 4 hours a day like that..."</i>	Utilizing Other People
	Psychological border flexibility	Statements that suggest the degree that the psychological boundaries are pliable	Are there any special arrangements or strategies that you have not mentioned yet that enable you to balance your work and family life? <i>"Support from family members like my mother. If I have problems, she mostly supports me. She's very helpful, if something doesn't go well I'll call my mother. So for me family roles, our helpers, our mothers and parents are very supportive"</i>	Utilizing Other People



Codes and Themes to Answer Research Question 2

Main category	Theme	Theme Definition	Example of quotes for each themes	Examples of Raw Codes
Blending	Blending	Statements that suggest both high degree of flexibility and permeability is present around the borders / the borders of the domains are mixing up.	<p>Would you generally say that having to deal with family and personal-related matters such as OV has been a problem for you with this job, in particular?</p> <p><i>"No it doesn't give me any problems since OV is flexible and doesn't tie me up. I can do my OV work after the work hours... I can do my OV works after work hours and it doesn't involve my work time"</i></p>	<p>Blended border</p> <p>Manage Time</p> <p>Juggle multiple roles</p>
			<p>What influence do you think your use of ICT has on the interaction between your work and nonwork activities?</p> <p><i>"A smart phone with social applications is a great help in getting me doing my OV works. It influences me a lot, but it does not interfere with my personal interactions with my work and family"</i></p>	<p>Blended psychological</p> <p>Leveraging ICT</p>
			<p>As you volunteer online, how do you create a separation between your work and family life?</p> <p><i>"Since my volunteer work is done at home, I don't really create a 'separation' between work and family time. I kind of mix it together. If it need a bit more of concentration I will do my OV work after my children has settled down sleeping or engaged in other activities night or day"</i></p> <p><i>"...Except there is an absolute emergency, then I prefer not to be disturbed. If I had to be on-call on night which usually reserved for my family time, then I had to make trade off, you know for the losing times"</i></p>	<p>Integration</p> <p>Manage Time</p> <p>Trade off time</p>
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Codes and Themes to Answer Research Question 2

Main category	Theme	Theme Definition	Example of quotes for each themes	Examples of Raw Codes
Strength	border strength at work	Statements which refers to individual who give full attention on the work related issues only in terms of space, time and thought.	<p>Would you say that most of your workload requires your undivided attention?</p> <p><i>"Obviously, my main job is my priority and I write articles and answer questions online when I have the free time"</i></p> <p><i>"... And our tasks often require our undivided attention. Interruptions such as phone calls, other doctors' requests, patients, sometimes disrupt us throughout the day and interfere with our already demanding workload"</i></p>	<p>priority</p> <p>Strong border at work</p>
			<p>While you are at work, do you often think about your home, family and OV works?</p> <p><i>"When at work, no. I don't think about home. For me work needs to be work and home needs to be home. For me at least, there couldn't be a grey area"</i></p>	<p>Strong psychological border at work</p>
			<p>What kinds of challenges did you face in juggling multiple demands in your life?</p> <p><i>"...But, in life I have to prioritize to what is important and what is not. Balancing this would require more than organization, aim, ambition and perhaps help as well"</i></p>	<p>prioritize</p>

Codes and Themes to Answer Research Question 2

Main category	Theme	Theme Definition	Example of quotes for each themes	Examples of Raw Codes
Strength	Border strength at home	Statements which refers to individual who are not doing work matters when with family, in terms of time, space and thinking.	<p>How often do you find yourself thinking about work while doing home-related things?</p> <p><i>"...Many times (haha). ... if I have patient in the ward even if I'm not on-call, the patients are my patients, so anything related to my patient, the staff will deal with me. So whether it is night or whatsoever, if the patient is not ok, I still have to go to the hospital to deal with the patient "</i></p>	Weak Border at home
			<p><i>"Sometimes. You know, I realize that as a doctor, the work will absorb a large part of" our life, so it's normal if you had that feeling. Think of your patients, your unfinished assignments and others</i></p>	Integrate WF
			<p>Do you bring your work home?</p> <p><i>"When I need to, bringing work home with me is not a problem. I understand the importance of meeting deadlines and getting work done on time, and sometimes that needs extra hours in the hospital or at home"</i></p>	Weak Border at home
			<p>What tactics do you use to maintain this separation?</p> <p><i>"... I have to allocate the time definitely after work hours, for example night at home. Here, in the hospital, I can't make it here, it's a bit difficult. If at home, it would be ok since my kids have grown up" "</i></p>	Manage Time
		296	<p><i>"Since my volunteer work is done at home I don't really create a 'separation' between work and family time. I kind of mix it together "</i></p>	Integrate WF