

THE CONUNDRUM OF SAVING OTHERS: IDENTIFYING FACTORS THAT INFLUENCE RESPONDING IN TIMES OF EMERGENCIES VIA THE MYRESPONDER SMARTPHONE APPLICATION

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ABSTRACT

This study aims to identify the factors that reduce the likelihood of community members responding to emergencies (i.e., cardiac arrest cases or small fires) before the arrival of paramedics in Singapore, specifically via the myResponder mobile application that was developed by the Singapore Civil Defence Force to save lives. A total of three focus group discussions were conducted with a total of 31 participants who subscribed to the myResponder app. Participants were asked about their impressions and degree of usage of the app, as well as their reasons for not responding to a call for help via the app. Responses were thematically coded, and five factors were found: (i) not seeing the value of being a first responder; (ii) having unaddressed concerns about responding; (iii) the perception that others have a negative perception of them as responders; (iv) fear of experiencing psychological distress from responding; and (v) fear of incurring personal loss. Implications for enhancing responding rates for the myResponder application are also discussed in the article.

CROWD-SOURCING EMERGENCY AID

While first responders and traditional emergency management systems remain indispensable, citizen participation strengthens the capacity of communities to mitigate the repercussions of and facilitate the recovery from both natural and man-made disasters (Scifo & Salman, 2015). More often than not, ordinary members of the public are the first source of aid to victims when emergencies occur, due to their proximity to the crisis site (Prati et al., 2012). Therefore,

interventions carried out by nearby citizens before the arrival of emergency services are both timely and critical (Whittaker et al., 2015). Goto et al. (2016) have found that on top of a short response time by emergency medical services (EMS), early assistance rendered by the public, such as administering bystander cardiopulmonary resuscitation (CPR) and defibrillation, is also an important determinant of survival for out-of-hospital cardiac arrests. Furthermore, Hasselqvist-Ax et al. (2015) report that the rate of survival is more than twice as

high among patients who receive bystander CPR before the arrival of EMS providers compared with those who do not. These findings underscore the significance of citizen participation in emergency response plans, and the necessity for governments and crisis management organisations to integrate the help of ordinary citizens in emergency management and recovery plans.

With the advancement of technology, crowd-sourcing tools and social media have been increasingly utilised to enhance emergency response, primarily due to their ability to tap on the vast potential of the larger community to partake in disaster relief efforts. The aftermath of the Haiti earthquake in 2010, for example, marked the “tipping point in the use of social media” (United Nations Foundation, 2012). When victims and affected citizens started to tag tweets and images from the disaster onto *Ushahidi*, a crisis mapping platform, they helped to streamline the process of allocating resources to the different disaster sites (Scifo & Salman, 2015). This unprecedented phenomenon has been labelled “digital volunteerism” as it illustrates how the combination of technology and citizen participation can help increase the efficacy of emergency services, as demonstrated in the aftermath of the Haiti earthquake (Starbird, 2011).

This concept of digital volunteerism highlights the advantages of utilising technology to gather help from the community. With the proliferation of mobile applications, many initiatives of this nature have been developed and utilised in several countries. Some examples include the Good Smartphone-Activated Medic (GoodSAM) application developed in the United Kingdom and the Murgency application developed by a San Francisco-based tech company in the United States. Both the GoodSAM and the Murgency mobile applications serve to alert potential responders in the vicinity of crises. This tying of the emergency dispatcher system to a mobile platform can help to increase the likelihood of prompt assistance being rendered to victims, thereby significantly increasing their chances of survival. It may also cultivate a cultural norm of helping, which can help build psychological resilience in the society in the long run.

Psychological Barriers to Helping

The existing literature finds that several psychological factors contribute to the likelihood of someone exhibiting helping behaviours. For instance, the willingness to intervene in a crisis may depend on the way potential responders perceive their ability to help. Dobbie et al. (2018) have discovered that, compared to their younger counterparts, older people tend to be less confident in CPR with or without the guidance of an emergency call handler; an older person is therefore less likely to intervene in an emergency. This is because a common psychological barrier to helping involves perceiving one's actions to be unhelpful to the crisis (Fernandez et al., 2006).

On the other hand, research by Basil et al. (2006) suggest that a person's decision to engage in helping behaviours is driven by the need to relieve oneself from strong emotions such as fear, anxiety or sympathy when faced with an emergency situation. The more emotionally straining the task of helping is, the bigger the desire to eradicate those feelings, hence increasing the likelihood of helping (Schwartz & Clausen, 1970). People also tend to help when they feel that they have a duty to add value to society by behaving in a way that is beneficial to the larger community, as postulated by the norm of social responsibility (De Groot & Steg, 2009).

Similarly, Baruh et al. (2014) observe that when people are prepared to deal with emergencies, their ability to respond before the official response organisations arrive is not only improved, but they are also able to work better with each other and the authorities. It is also noteworthy that the bystander effect is unlikely to occur in dangerous situations where people are cognizant of the potential negative consequences if they do not intervene, as observed in a series of experimental studies conducted by Fischer et al. (2006). However, it is also important to note that research studies on the bystander effect have long posited that the presence of other bystanders decreases the likelihood of a person helping another. When witnessing someone in need during times of emergencies, the motivation to intervene decreases when one perceives that there many other bystanders who are available (Hortensius & de Gelder, 2014) or are more qualified to

render assistance (Fischer et al., 2011), leading to one's unwillingness to help to avoid offering unwarranted assistance.

Therefore, it is evident that for responding rates to increase, or to at least raise the likelihood of responding to calls for help, it is necessary to understand the psychological factors preventing people from going forth to help. Without this knowledge, systematic initiatives to increase helping behaviours, particularly in times of emergencies, such as crowd-sourcing apps and its affiliates may be rendered ineffective.

THE PRESENT STUDY

This study aims to study the inhibiting factors of responding to emergencies via a help-sourcing mobile application called the myResponder application – a form of digital volunteerism – among Singaporeans. Recognising the importance of early intervention in saving the lives of people who have experienced out-of-hospital cardiac arrest (OHCA), the Singapore Civil Defence Force (SCDF) launched the myResponder app in 2015 in a concerted effort to further engage and empower the community (Ng et al., 2020). The introduction of the app serves to facilitate the community's transition from a concerned bystander to an active responder. This development echoes the recommendation of the Global Resuscitation Alliance to improve cardiac arrest survival rates by using smart technologies to extend CPR and public access defibrillation programmes, as well as to notify volunteer responders of a nearby cardiac arrest and identify the location of the nearest automated external defibrillator (AED) (Global Resuscitation Alliance, 2017).

The American Heart Association has similarly acknowledged that mobile apps have the potential to improve OHCA response. Working towards SCDF's vision of a Nation of Lifesavers by 2025, SCDF partnered GovTech to develop myResponder, an app that leverages a smartphone's geolocation technology as Singapore has one of the highest smartphone

penetration rates in the world. Since 70 per cent of all OHCA occur within residential estates, the myResponder app serves to notify registered users of cardiac arrests in their vicinity, thereby allowing members of the public to attend to victims before the arrival of paramedics. (The app also began issuing alerts of minor rubbish chute and bin fires in 2018.) Since its launch in April 2015, the myResponder app has been downloaded more than 143,000 times, and has a network of around 4,800 active community first responders (CFRs). In 2019, when the SCDF sent out alerts for 3,917 suspected cardiac arrest cases, 1,366 CFRs responded to the incidents (SCDF, 2020). Might it be possible to improve on this response rate of 35 per cent achieved in 2019?¹

While utilising digital volunteerism in crisis response is prevalent operationally, there are relatively fewer studies that have examined the psychological factors involved in decision making during a crisis in the Singapore context. Hence, this study aims to build on the existing research of crisis response by examining the mediating psychological mechanisms underlying the decision to respond or not amongst the myResponder users. Specifically, this study aims to find the conditions that have or would have inhibited people from responding to emergencies by conducting Focus Group Discussions with users of the app. The insights gleaned from this study will be used to find ways to increase helping behaviours in times of emergencies.

METHODS

Research Design

Due to the exploratory nature of this study, a qualitative approach was taken to gather data. Three rounds of focus group discussions (FGDs) were conducted to obtain details about the opinions and experiences of respondents and non-respondents of the myResponder app. A total of three FGDs were conducted for this study. Data collection stopped after the third FGD

¹Following the outbreak of COVID-19 in 2020, the SCDF stopped activating community first responders through the myResponder app although its 995 operations centre continued to advise callers to perform dispatcher assisted CPR (Ng et al, 2020).

when theoretical saturation was reached (see Krueger, 1994). The FGDs were conducted over four months, from August to November 2018.

Compared to structured interviews, FGDs can generate more information yet offer informational depth on a similar level to that of structured interviews, which is necessary in order to make sense of the huge variety of motivations and inhibitions of responding amongst the participants. FGDs also facilitate the exchange of information and opinions between participants as opposed to “simply reacting to the questions and language of an interviewer in a one-to-one situation” (Conover et al., 1991), thereby increasing the chances of new, unexpected findings stemming from participants’ exchange of views (Onwuegbuzie et al., 2009). Moreover, FGDs have been widely used since the 1980s across various disciplines, ranging from the social sciences to marketing to healthcare (Nyumba et al., 2018; Smithson, 2000), making it an appropriate research methodology for this issue.

Participants

There was a total of 31 participants who took part in the focus group discussions, with 10 participants in FGD 1, 11 participants in FGD 2, and 10 participants in FGD 3. The participants consisted of a total of 3 females, and 28 males, and the age of participants ranged from 17 to 45 years old. The number of participants per FGD was kept to a maximum of 11, and this was considered optimal as it is large enough to generate a wide range of insights and yet small enough that the discussion group does not fragment into smaller units of discussion (see Nyumba et al., 2018).

All interviewees were members of the community and were subscribers of the myResponder app who had responded or did not respond to emergencies. Participants were recruited via phone calls or short messaging services (SMS) and were interviewed in a group setting. All the FGDs were facilitated by a single interviewer, who was unaware whether the interviewees were respondents or non-respondents of the app. All the FGDs discussed two main questions: (i) What are the factors that have inhibited or would have

inhibited responding to calls for help via the app? and (ii) What would have increased the likelihood of responding? Before the commencement of the FGD, participants were briefed on the purpose of the research, confidentiality assurances, and the freedom to withdraw from the study. Informed consent was obtained from all the participants before the FGDs began, and a debrief session was held after each FGD. The FGDs were audio-recorded, and verbatim transcripts were used for data analysis.

Analysis

Data analysis was carried out by four coders and was done in multiple stages. Principles from thematic analysis guided the process of analysis. After familiarising themselves with the data, the coders read through the transcripts closely and analysed them for preliminary codes. The codes were then collated to form general, broader themes – and relevant sub-themes – as the coders eliminated, combined and subdivided the coding categories previously identified (Nyumba et al., 2018). This process was guided by pattern recognition (Fereday & Muir-Cochrane, 2006), and coders also came up with more general themes that connected one code to another. Any disagreements amongst coders were resolved via further debates and discussion. In the final phase, the themes were reviewed in an iterative process by re-reading the transcripts to ensure all relevant data had been coded and to confirm that the codes fit into the allocated themes. Furthermore, a frequency count of the occurrence of the themes – i.e., the number of times a particular theme was brought up in the FGDs – was carried out. This approach supplemented qualitative data with numerical counts, which adds richness to the data by providing information on the level of consensus/dissent with regards to a particular theme (Onwuegbuzie et al., 2009).

RESULTS

Thematic analysis of the FGDs identified five themes that illustrated the conditions that discouraged responding. A thematic map showing the main themes of inhibitions are shown in Figure 1.

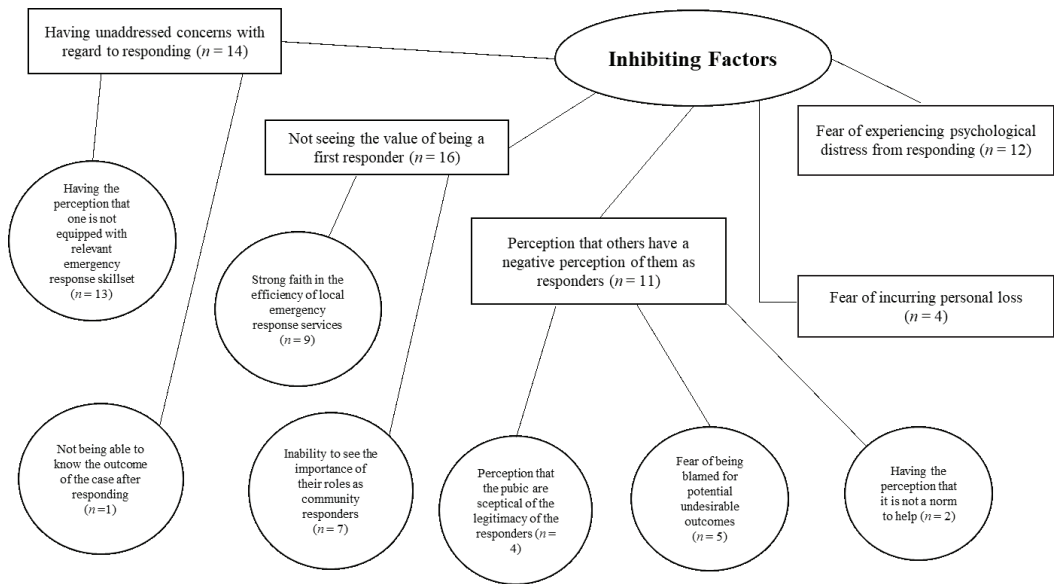


Figure 1. Main Themes of Inhibitions to Responding

Not Seeing the Value of Being a First Responder (n = 16)

Participants reflected that feeling a sense of insignificance at the scene of crisis during previous attempts to respond, or having a perception that their help would not be of value, inhibited their response. This sense of insignificance was found to be rooted in two sub-themes.

A strong faith in the efficiency of local emergency response services

Some participants revealed an expectation that the authorities would respond to account for their inhibition. For example, one responder said that “the few recent ones I did not accept because by the time I could have gotten to their home, SCDF would have responded”. Similarly, another participant said, “I have faith in the SCDF ... I know even if I do not respond, they will still respond in due time”. Participants were thus not motivated to respond because they expected the authorities to respond regardless of their presence at the scene.

The inability to see the importance of their roles as community responders

Some participants also did not see the importance of their roles as community first-responders. One participant said that “we do

not play a pivotal role in making the fate of the person ... even if we did respond ... we are more of an assistant role”. Similarly, another participant said, “... even if I respond, it is only to give early care”. These quotes suggest a perceived notion that their inputs as responders were less critical relative to the response provided by emergency response services.

Having Unaddressed Concerns with Regard to Responding (n = 14)

Participants reported that having a sense of uncertainty decreased their inclination to respond. Specifically, the sense of uncertainty stemmed from two concerns.

Having the perception that one is not equipped with the relevant emergency response skillset

Due to a prevailing perception that responding to the cases through the myResponder app required a specific skillset, participants said that the uncertainty over whether they possessed the relevant emergency-response skillset inhibited them from responding. The most commonly cited skillset is CPR. One participant said that the “first thing I will think is ‘do I remember how to do CPR?’”, while another similarly said, “sometimes we have people who know CPR, but they do not know the proper procedure”. This uncertainty over the possession of relevant skillsets prevents

individuals from responding because they are unsure whether they will be able to contribute to improving the situation.

Conversely, some participants said that being certain they had the necessary skills motivated them to respond. For example, one respondent said, "because I am trained ... if I can help then I will just help". Similarly, another responder said it boiled down to the "can help why not attitude" and that "not a lot of people have the skills and the knowledge to do so ... so if you can help why not?" Furthermore, some responders said that they responded because the act was familiar to them, thus granting them a certain level of confidence in the act of responding. A responder shared that having previously responded to a case, in the next few cases, "there was just that sense of calm ... like no more crying before and after, it is just that sense of calm". This sense of psychological assurance helped them overcome potential mental barriers that they had experienced previously when handling cases. This observation suggests that participants feel that it is only natural to respond through the myResponder app, when they are proficient in the relevant emergency response skillset.

Not being able to know the outcome of the case after responding

Due to limitations posed by privacy protection legislation in Singapore, responders are not able to find out the outcome of the case they respond to. This uncertainty surrounding the outcome of the case appears to pose as an inhibiting factor for future response. One responder said "is there any way that you can see whether after you have attended a case is there any way where you can see that they survived? Or is considered confidential? Because I want to know ...".

Perception that Others have a Negative Perception of them as Responders (n = 11)

Some individuals did not respond because they felt that others would have a negative image of them should they respond. This negative perception creates an environment that is not conducive for response and can be surmised by three sub-themes.

Perception that the public are sceptical of the legitimacy of the responders

Some perceived the public to be sceptical of their legitimacy as actual responders when they responded. This is an inhibiting factor for future response. One responder said, "I told them that I am a trained CPR and AED personnel, I am able to help ... some of them will still hesitate a bit". Another responder cited a hypothetical situation, saying "will the relative [of the victim] allow me to enter to help ... they will ask you like ... 'who are you?'".

Fear of being blamed for potential undesirable outcomes

Some participants also expressed their fear of being blamed for undesirable outcomes by the public as an inhibiting factor. For example, one responder said that while responding to the emergency, "people might think you are doing something wrong, especially if you are not in uniform". The fear of being blamed for any potential undesirable outcomes may serve to create inertia for future response. Another participant referred to a concern that "you are not sure if you get judged for what you do".

Having the perception that it is not a norm to help

Lastly, participants perceived that in Singapore, it is not the norm to help. One participant said that "I think overall it is more of a cultural issue in Singapore ... a lot of people are busy and do not want to learn [CPR]". Another responder noted that when people arrived at the scene, "no one helped ... and no one kind of assisted ... people were just standing there using their phones and taking videos". Thus, they felt that they would be acting out of what was expected of them should they respond.

Fear of Experiencing Psychological Distress from Responding (n = 12)

Individuals may be hesitant to respond in the future because they have been traumatised previously. This fear of psychological distress can occur as a result of their exposure to an actual emergency case, and during emergency response training. For example, a responder said when responding to a victim, "rigour mortis had set in ... there was blood everywhere ... he was vomiting blood I guess before he passed on ... my

friend was quite traumatised, and we had nobody to talk to except for the two of us". One participant suggested being traumatised after a training session, saying "one of the courses [CPR course], I was a bit traumatised".

Fear of Incurring Personal Loss (n = 4)

The fear of incurring personal loss as a consequence of responding is one of the factors that inhibited response. Some individuals said that they did not respond because they were concerned that their safety might be compromised when they respond to cases. For example, one participant said, "what if the person has some disease which is infectious ... that is actually a real thing, and that is a real problem". Besides, one participant cited concerns over insurance liability as responders are not insured through the app. The participant said "what if you get injured? What will happen? Are we covered?".

DISCUSSION

Of the five themes identified in this study, two appear to be most salient in inhibiting responding to emergencies in the community: the presence of unaddressed concerns about responding, and a devaluation of the idea of rendering help. While the analysis of the data has focused on inhibitions, we note that participants also cite the reverse to be true, where the absence of inhibiting factors conversely result in a higher motivation to respond. These findings provide considerable insights into the bystander effect, serving as further evidence for studies that have identified conditions that may potentially inhibit helping behaviours. However, certain aspects of the findings in this study differ from earlier published studies, particularly those on the real-world bystander effect, plausibly because this study has been carried out in the context of digital volunteerism where help from the community is gathered online by utilising technology, and in our case, a mobile application.

Our results share several similarities with Fernandez et al.'s (2006) finding that a common psychological barrier to helping is the perception that one's assistance is irrelevant or futile to the person in need of help. In our study, participants said that they are not likely to intervene when they think that they do not have the relevant skillset to respond to a cardiac arrest (e.g., administering CPR, operating the AED). Similarly, participants who have responded did so

because they felt that they were able to contribute to the betterment of the situation as they are equipped with the competencies that are useful in emergency response.

Specifically, our analysis suggests that those who have the impression that the sole purpose of responding is to either render CPR or to operate the AED are largely hindered from responding, but those who are able to recognise that helping behaviours are not necessarily restricted to these two actions are more likely to intervene. These responders possess the flexibility to see that their help is still valuable even if there is already someone at the scene attending to the case (e.g., providing psychological first aid to family members, helping paramedics move victims onto the ambulance). This observation reflects the importance of the ability of the myResponder app users to see the value of one's help beyond having tangible skills to alleviate physical injuries and to interpret responding as a multifaceted act. Similarly, our findings are consistent with what Baruh et al. (2014) have observed about the considerations that a person usually takes before deciding to help. As anticipated, our findings demonstrate that when people are prepared, or at least feel prepared, to deal with a crisis, their tendency to intervene will increase.

Interestingly, unlike other research carried out in this area, this study finds that participants take into account how they think others will perceive them in deciding whether to respond to an emergency or not. As in the sections mentioned above, our study reveals that participants are less willing to render assistance when they (i) perceive the recipients of their help are sceptical of their legitimacy as responders, (ii) are afraid of being blamed by the victim or victim's family members for any undesirable outcomes, or (iii) carry the perception that it is not a norm in Singapore to help. Likewise, it becomes a motivation when participants perceive that others are receptive towards their help – e.g., family members welcoming them into the house without suspicion.

This idea that receptivity of one's help results in prosocial behaviour alludes to earlier research studies that have shown significant links between gratitude and appreciation, as well as prosocial behaviours. For instance, Barlett and DeSteno (2006) demonstrate that gratitude serves to nurture social relationships by encouraging reciprocal

prosocial behaviour between the individual expressing gratitude and the recipient of gratitude. Extrapolating this finding to the present study, the receptivity of help registered as a display of positive emotions by the victim or family members of the victim can guide and encourage future responding behaviours among community first responders.

There are two limitations of interest. Firstly, the small number of participants is by no means representative of the larger corpus of myResponder subscribers. An additional limitation stems from the presence of other mediating variables such as age, occupation of app users, and gender, which are not accounted for in this study. In light of this, future research could attempt to validate the present results with a larger sample and to establish whether psychological inhibitors vary with age, type of emergencies or other mediating factors.

These limitations notwithstanding, the present study does present itself as a worthwhile endeavour to further our insights on improving community responses towards emergencies. To effectively increase the likelihood of responding via the myResponder and other similar applications, initiatives to increase responding should focus on providing information within the early phases of activating help to alleviate any unaddressed concerns that may hinder potential responders from stepping forward. There is also a need to increase the awareness of the roles played by community responders, by reinforcing the importance of mobilising the community in times of emergencies, emphasising the necessity of interventions during the first few critical minutes of a cardiac arrest, and educating app users that they can still respond to a call for help even if they are not trained in life-saving skills.

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SPEAKING TO WITNESSES, INFORMANTS AND PATIENTS: PSYCHOLOGICAL TACTICS FOR PANDEMIC CONTACT TRACING

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ABSTRACT

Contact tracing – the identification and follow-up of persons who may have come into contact with an infected person – has been documented to be effective in reducing uncontrollable transmission in past epidemics, in particular SARS and smallpox. Singapore has historically had very strong epidemiological surveillance and contact-tracing capacity and has won international praise for its approach in managing the COVID-19 pandemic through rigorous multi-agency contact tracing processes and quarantine efforts. This brief focuses on the questioning aspect of traditional contact tracing, which relies heavily on the recall memory of patients and that of the people the patients come into contact with. Some of the challenges faced by contact tracers include frustrated contacts and patients who are unable to remember all of their whereabouts and contacts. To affirm and enhance questioning and memory recall techniques used by contact tracers and activity mappers, this paper highlights techniques that are scientifically supported by psychology.

SINGAPORE'S COVID-19 CONTACT TRACING EFFORTS

The World Health Organization defines contact tracing as the identification and follow-up of persons who may have come into contact with an infected person (WHO, 2017). Previously conducted scientific research shows that contact tracing is an effective measure for the control of emerging epidemics; it has been proven to be effective in reducing the uncontrollable transmission of SARS and smallpox (Klinkenberg et al., 2006).

In Singapore, the Ministry of Health (MOH) relies on quick and effective contract tracing as a critical tool in containing the COVID-19 pandemic in the Republic. Once someone tests positive for COVID-19, MOH, supported by various agencies including the Singapore Police Force (SPF), begins the work of contact tracing to detect and isolate their close contacts, who are either placed under quarantine or put on health

surveillance (Yeo, 2020; Ministry of Health, 2020). The activity mapping, and meticulous identification of close contacts of a confirmed case was initially carried out through a manual contact tracing process that is now augmented by digital tools like SafeEntry and TraceTogether. In early 2020, a study carried out by Harvard University estimated that Singapore was detecting three times the number of COVID-19 cases as compared to other countries. The study attributed Singapore's efficiency in case detection to the nation's "strong epidemiological surveillance" and rigorous multi-agency contact tracing processes (Niehus et al., 2020). This ability to quickly ring-fence and identify possible cases is important given the strong emphasis by the World Health Organisation that timely contact tracing is pivotal in containing the spread of COVID-19 (Coffrini, 2020).

The use of police officers in contact tracing is distinctive to Singapore (Vaswani, 2020). Minister for Law and Home Affairs K Shanmugam

has noted that contact tracing involves “a lot of careful investigative work” and that “in a place like Singapore with its frequency of movement and the frequency of contacts – a case in any city – that this is not an easy task”. Describing the role of police officers in the contact tracing process, Minister Shanmugam added: “MOH will do the first cut in terms of interviewing the patient and identifying some data and then pass this over, and these officers then run through the whole investigation process” (Mohan, 2020).

Scope and Purpose of Brief

This brief focuses on the questioning aspect of traditional contact tracing. Contact tracing relies heavily on the recall and memory of patients and that of the people that they come into contact with. In addition, information might be obtained from patients’ next-of-kin or third parties (e.g., hotel management staff, taxi drivers) to provide a more holistic picture of a patient’s recent whereabouts (Sagar, 2020). Some challenges faced by contact tracers during interactions include frustrated contacts and patients being unable to remember all their contacts (“Drop everything, scramble”, 2020; Kok, 2020).

Data for this brief was gathered from sources such as print media, and articles from professional journals on investigative interviewing and memory, and also draws from other research reports written for the Home Team by the Home Team Behavioural Sciences Centre (HTBSC). This brief aims to highlight questioning techniques that are scientifically supported, so as to affirm and enhance current questioning and memory recall techniques being used in contact tracing efforts.

FOUR OPERATIONAL TACTICS FROM THE PSYCHOLOGY OF INVESTIGATIVE INTERVIEWING & DECEPTION DETECTION

Operational Tactic #1: Build Rapport

Rapport building is one of the key skills utilised by contact tracers to obtain sufficient necessary information with minimal resistance and maximum cooperation (Vrij et al., 2017). In professional circles, rapport is defined as “a working relationship between operator and

source based on a mutually shared understanding of each other’s goals and needs, which can lead to useful, actionable intelligence or information” (Kelly et al., 2013).

The benefits of rapport building are numerous (Chin, 2017), including: greater responsiveness and cooperation (Bull & Soukara, 2010), richer details (Collins et al., 2002), and voluntary admittance of criminal behaviour (Holmberg & Christianson, 2002). In the context of contact tracing, members of the public are supposedly more cooperative than criminal suspects. Yet, it is human nature to want to see oneself in a positive light, and that might lead to reluctance to admit wrong-doing (Whitbourne, 2017)

When carried out properly, rapport building can allow contact tracers to defuse tense situations, overcome reluctance, and gain cooperation from witnesses, informants, and patients. Rapport building can be achieved via three ways: lowering psychological barriers, modelling calm behaviours, and engaging in active listening.

Lowering Psychological Barriers

It is important to lower psychological barriers at the start of any interaction. Reluctance and initial hesitation are barriers raised as a form of psychological protection in response to anxiety about an uncertain situation (Grupe & Nitschke, 2013).

Tip 1: Contact tracers should introduce themselves and also ask the member of the public how he or she would like to be addressed.

Tip 2: Contact tracers should provide a succinct, one-sentence summary of the purpose of the interaction.

Modelling of Preferred Behaviours

This works best when encountering members of the public who express their anxiety and frustration in the face of uncertainty. Modelling calm behaviours throughout an interaction assists in de-escalating tension (Richter, 2006).

Tip 1: Contact tracers can model calm behaviours verbally by using a slightly lower tone of voice and speaking at a pace comfortable to the listener.

Tip 2: Contact tracers can proactively ask the member of the public to tell them what is upsetting him or her. For example, to ask, “you sound upset, can I ask what is making you worried?”

Engaging in Active Listening

Active listening is not just about passively listening when a person is speaking or simply acknowledging what the member of the public has just said (Weger et al., 2014). Rather, active listening consists of techniques to build empathy and trust, and to resolve conflicts (Thompson, 2013). This results in more positive outcomes.

Tip 1: Contact tracers can use simple actions and words from time to time to display interest. For example, to say, “mhh”, or “I see”, and to nod at appropriate pauses in the interaction.

Tip 2: Contact tracers can also use verbal responses to display their attention. For example, to summarise key information provided by the member of the public when concluding an interaction.

Operational Tactic #2: Smart Interviewing

Although the stakes are different in contact tracing as compared to an eyewitness interview, it is still vital for contact tracers to verify the information provided by close contacts to establish their whereabouts and interactions accurately and as quickly as possible. Research has shown that the quality and length of interviewee response is very much dependent on how questions are phrased (Oxburgh et al., 2010). On the contrary, ineffective questioning techniques tend to create barriers, stifle the flow of information and hinder efforts in getting accurate information (Sandoval, 2003). The best way to carry out smart interviewing is to perceive the questioning process as a “funnelling” process that strategically sharpens the focus on essential information.

Thinking of the Questioning Process as a Funnel

Strategic questioning improves the process of gathering and verifying information.

Tip 1: Contact tracers should start their questioning with broad, open-ended inquiries designed to obtain as much information as possible. For example, to ask, “tell me everything you have done in the past two days.”

Tip 2: Contact tracers should follow-up broad inquiries with direct and specific closed questions, especially if specific details were omitted or if open-ended questions did not provide sufficient information (Snook & Keating, 2011). For example, to ask, “Where did you go after work yesterday?”

Operational Tactic #3: Enhance Memory Recall

Similar to interviewing, contact tracing involves memory recall. However, the belief that memory operates like a video recorder is woefully inaccurate (Simons & Chabris, 2011). Instead, memory is a dynamic and reconstructive process that is susceptible to error and distortion (Schacter, 1999). In fact, over 40 years of research has documented that eyewitness memory is fallible (Conway, 2012).

Given the fallibility of memory, it is vital that contact tracers understand how memory works and the ways in which errors and omissions arise in order to get the most accurate and reliable information. Often during an interview, interviewees cannot retrieve a piece of information from memory and research seems to suggest that the problem with memory failure tends to be due to a problem of retrieval rather than a loss of the information completely.

Professor Lorraine Hope from the University of Portsmouth (2018) has highlighted that one of the reasons a cooperative source might respond with either “I don’t know” or “I don’t remember” could be a difficulty with separating out a single specific instance when distinguishing between similar events (e.g. member of public trying to recall a particular taxi journey despite taking a taxi daily over a month). In such instances, she suggests two methods that might assist discrimination between repeated events: self-generated cues and the timeline technique.

Encouraging Self-generated Cues

These cues capitalise on the associative nature of memory and act to prompt the most salient details from memory (Kontogianni et al., 2018).

Tip 1: Contact tracers can trigger the memory of patients or close contacts by giving them a

simple instruction: "Tell me the first six things that come to mind when you think about [person/event]".

Tip 2: Contact tracers who are dealing simultaneously with several patients or close contacts can amend the aforementioned instruction to request the individuals to "write down the first six things that come to mind when you think about [person/event]".

Tip 3: Contact tracers can explain to the members of the public that by focusing on each item, this will help them to remember better.

Employing Timeline Technique

The timeline technique helps contacts to recall events from a particular time period in sequence, identify individuals involved, and link those individuals with their actions (Hope et al., 2013). This technique works best for obtaining rich and detailed information from confirmed COVID-19 cases.

Tip 1: Contact tracers can aid memory recall by using a 'timeline' to provide a structure for remembering and reporting their movements and interactions in the past two weeks.

Combining the Timeline Technique with Self-generated Cues Approach

The Timeline Technique can be used with a cooperative interviewee in any interview where the goal, similar to contact tracing, is to elicit information that the interviewee may have over a period of time (Hope et al., 2013). As such, the timeline technique, in conjunction with self-generated cues can be used

by contact tracers to enhance recall for both unique and repeated events.

Operational Tactic #4: Assess for the Truth

Assessing truthfulness is another skill contact tracers need to determine if the information provided by a witness, informant or patient is reliable. The Criteria-Based Content Analysis (CBCA) is a 19-criteria tool used to assess the truthfulness of a statement based on a range of truth indicators (Hauch et al., 2017; Steller & Kohnken, 1989 as cited in Amado et al., 2016). Developed to assist in judicial decisions regarding the truthfulness of child witnesses in cases of child sexual offenses (Roma et al., 2011), CBCA has been deemed useful in broader settings involving adult populations (Amado et al., 2015). In fact, its truth indicators can distinguish between an actual memory of a self-experienced event and a fabricated event by adult populations (Amado et al., 2016), although, to date, there is no empirical evidence of a total score cut-off, nor is there theoretical justification to assess on all criteria.

Four of the original CBCA criteria are particularly indicative of truthfulness in a statement (Amado et al., 2016). Whilst they do not directly determine if a person is lying, the CBCA criteria can assist in decision-making on the accuracy of information. The top four indicators are: quantity of details, logical structure, unstructured production, and conversation reproductions.

Look out for	Tips for Assessing Truthfulness
<i>Quantity of Details</i>	Tip 1: Contact tracers should assess whether the information contains details. For example, to look for voluntary mention of details of persons, attire, events attended, and a description of the surrounding location.
<i>Logical Structure</i>	Tip 2: Contact tracers should assess, based on the details provided and knowledge of the local area, whether the information provided makes logical sense. For example, when a member of public narrates a journey, the stated mode of transport, costs, and the duration of travel has to be realistic.
<i>Unstructured Production</i>	Tip 3: Contact tracers should look out for memory recalls that include digressions and/or a jumbled sequence of order. This truth indicator is likely to be present in non-scripted statements. For example, a short explanation for the choice of route avoided and personal journey preferences.
<i>Conversation Reproductions</i>	Tip 4: Contact tracers should look out for memory recalls that include word-for-word conversations that took place. For example, narrating a few sentences of a conversation that took place at a lunch meeting.

FUTURE DIRECTIONS AND RECOMMENDATIONS FOR THE HOME TEAM

Acknowledge the Value of Contact Tracing Skill Set

The effort of tracing individuals with limited information requires a set of skills. For police investigators involved in contact tracing efforts, the various investigative skills (i.e. profiling, interviewing, negotiation and persuasion, and deception detection) are transferable to contact tracing efforts. Whilst pandemics such as COVID-19 may not happen often, there is value in developing the skill set of contact tracers (including those from MOH and SPF) in these areas, given the broad applicability of such skills to their line of work and beyond. The Home Team should consider training their officers or providing them with exposure in such domains to hone their investigative skills.

Tap on Digital and Technological Platforms

Contact tracing efforts can also be boosted by tapping on digital and technological platforms. One such COVID-19 initiative by the Singapore government would be SafeEntry, a national digital check-in system that captures individuals' arrival and departure timings at various venues (e.g. offices, schools, malls) (Yip, 2020). By doing so, it records details that enables contact tracers to locate close contacts of infected cases quickly and prevent the formation of new clusters.

Another initiative would be the mobile application TraceTogether, which was developed by the Government Technology Agency (GovTech) in collaboration with MOH (Baharudin & Wong, 2020). The app facilitates contact tracing efforts by enabling contact tracers to inform and isolate users who are close contacts of COVID-19 cases more quickly, which would be more effective in reducing the risk of local transmission. Available also as a user-friendly TraceTogether token, it is a form of wearable technology for those who do not have smart phones, such as the elderly, or have issues with using the app on their phones (Lee, 2020).

Additionally, while police officers do tap on other digital resources such as CCTV systems (e.g.

OPERATIONAL TIPS FOR CONTACT TRACERS

From the psychology of investigative interviewing and deception detection

BUILD RAPPORT

Lower psychological barriers of uncertainty. Example: Provide a one-sentence summary of purpose

Model calm behaviours to deescalate tension. Example: Speak with a slightly lower tone of voice

Active listening to build empathy and trust. Example: Nod at appropriate pauses

SMART INTERVIEWING

Think of the questioning process as a funnel-approach...

Start with broad, open-ended inquires. If specific details were omitted, continue with direct and specific closed questions. Never flip this sequence the other way around.

ENHANCE MEMORY RECALL

Memory is not like a video recorder. To help someone remember...

Ask them, "Tell me the first six things that come to mind when you think about [person/event]."

Hint: This works well with another memory recall aid: "Timeline Technique".

ASSESS THE TRUTH

These cues indicate truthfulness in a statement. Look out for...

- (1) greater quantity of details
- (2) responses that make logical sense

For non-scripted memory recalls, responses may include (3) digressions, (4) word-for-word conversation reproductions.

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POLCAM), the profiling of social media accounts of patients who have been tested positive for COVID-19 might be beneficial in identifying close contacts whom they may be unable to recall. Although resource- and time-intensive in nature, this might be necessary for unique and urgent cases.

CONCLUSION

Contact tracing plays a crucial role in Singapore's strategy to limit local transmission of COVID-19. Effective and rapid contact tracing enables faster identification of people-at-risk and the resultant quarantine of confirmed cases will limit the spread locally. Significant psychological contributions in the field of investigative interviewing, memory, and

deception detection can be applied to enhance the questioning skills in contact tracing. The four operational tactics – build rapport, enhance memory recall, assess the truth, and smart interviewing – can assist contact tracing officers to improve the speed and accuracy of information gathering during emerging epidemics (i.e. the fight against COVID-19).

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The authors would like to thank Director HTBSC, Dr Majeed Khader; Senior Assistant Director, Ms Whistine Chai; and Senior Assistant Director, Mr Jeffery Chin, for their continuous guidance, support and encouragement.

The **Home Team Behavioural Sciences Centre** (HTBSC) was established in 2005 to use behavioural sciences to support the Home Team's operational work. HTBSC strives to be a path-finding centre of excellence for behavioural sciences research and training in the areas of crime, safety, and security. The centre serves to equip Home Team (HT) officers with the knowledge and skills to deal with issues relating to human behaviours, so as to complement their operational effectiveness as well as enhance their efficiency. Key specialised psychological research branches of the HTBSC include:

- Crime, Investigation and Forensic Psychology (CIFP)
- Operations and Leadership Psychology (OLP)
- Extremism and Terrorism Psychology (ETP)
- Resilience and Safety Psychology (RSP)

With time, HTBSC seeks to be a nexus connecting HT departments, academia and international experts, to offer a dynamic fusion of ideas and practical solutions for HT officers striving to make Singapore a secure home.

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FROM PIONEER POLICE PSYCHOLOGIST TO THE HOME TEAM'S CHIEF PSYCHOLOGIST:

REFLECTIONS BY DR MAJEED KHADER

When I was asked to write an article about the role of the Chief Psychologist at the Ministry of Home Affairs (MHA), I imagined the reader grimacing at yet another personal biography. I did too. On second thoughts, however, I realised there have been several points of reflection in my personal journey as a Home Team psychologist, over 28 years of working in this field, that other professionals and the general reader might find interesting. With this in mind, I share them here.

THE FIRST POLICE PSYCHOLOGIST AT THE POLICE ACADEMY

Although the title Chief Psychologist of MHA might sound grandiose, my beginnings were humble. No room, no table, no computer, and no one at the Police Academy knew I was coming. So, my first day at work was, to say the least, unusual. As a psychologist recruited on contract and placed at the Police Academy (or PA) – HQ was unclear what to do with me – I was asked to teach stress management. PA, along Thomson Road, was this huge, green, serene, beautiful place with lots of history, going back pre-war. There was so much history that there were stories of it being haunted. At times, some of my clients, who were trainees, discussed their spooky experiences during my counselling sessions; the common story was one where they saw a spirit holding on to the ceiling fan, looking down at them as they lay in bed at night. Why didn't they prepare me for this at psychology school, I wondered. At the PA, when news travelled that there was an in-house psychologist, counselling picked up quickly, mostly for national service trainees who sometimes faced adjustment issues. So my work mostly comprised stress management and counselling. For three years, I taught stress management training to thousands of officers.

By 1997, the stress training became routine. But little did I realise how it had shaped me and the profession. For instance, officers that I had trained had become comfortable talking to a psychologist (which paved the way for many future psychologists both in the police and other departments). They knew about stress, critical incident stress, trauma and different ways of coping. Graduating officers deployed at different units were supporters and often helped out as 'eyes and ears' who shared with me the morale and work challenges they faced operationally, which helped me appreciate ground concerns as I progressed in my career. Bosses found this useful for programme evaluation and implementation, because they had (through my work) a sense of what the officers liked and disliked. Also, it was easy to walk into a police station and be welcomed as their previous trainer at PA; officers often have fond memories of PA. Some senior officer trainees (then in their twenties as young Inspectors and Assistant Superintendents) were over time promoted to commanders and supported the use of psychology in police work. (There is sometimes bureaucratic debate about whether an embedded in-house psychological services approach or a HQ-centralised or outsourced psychological services approach may be better. For the reasons cited here, I think an embedded approach is better, from the perspective of getting deep insights into policing and law enforcement.)

Other Home Team departments soon grew open to the idea of using psychologists. Much of this was due to the early work of our team and I cannot take sole credit for it; but being a pioneer, I was in the thick of it. At a personal and deeper professional level, I was getting very raw first-hand experience of policing and criminal work, when I interacted and lunched with my police friends. The pace at the Academy was slower than in HQ and the front-line units, so real friendships were forged through deeper conversations. Close lunch mates, many of who were senior in age, shared inside stories about prominent cases, including the Toa Payoh Ritual Murders, gang fights, past secret societies, and gun man incidents in early Singapore. Many of these officers remain friends with me today, thanks to social media. Then they treated me like a little brother, even though I was novelty to them, like a museum exhibit. Psychology was novel because it wasn't only new to policing, it was relatively new in Singapore. NUS had rolled out its fourth batch of Psychology Honours students. Prior to me and my senior Peter Tan who had joined six months earlier, few, if any, recruited psychology staff were from the local universities. Almost all were returned psychology scholars and had mainly worked at the Institute of Mental Health and Woodbridge Hospital. I think in a way we were test cases. The climate at PA was ideal for a young researcher interested in crime and policing. I learned much about policing, investigations, crime on the streets and the life of a *mata*¹. Unlike many other countries, cops here don't write about their experiences or their culture, but their tales were captivating for a young man who had only read about these things from Western police psychology journals and crime novels.

We do so much more now with a full range of services in the Home team and MHA. I refer to these services as falling under the three O's: Services for Officers (counselling, peer counselling, resilience programmes, crisis support); the Organisation (psychologically informed environments and processes, leadership assessment and selection, leadership development, leadership training, crisis leadership training, organisational change management and development, consultations, psychological selection of entry level officers,

specialist groups and special tactics groups, NSF support and care); and Operations and forensic/criminal psychology (criminal profiling, hostage and crisis negotiation, crowd psychology management, emergency psychology, evaluation and crime research, crime prevention, offender rehabilitation and behaviour change, drug risk assessments and rehabilitation, intel support and preparing our communities for major incidents and trauma). To support these three Os, there is overarching research and development we undertake employing behavioural and psychological sciences.

LIFE AND DEATH MATTERS

When you see death as part of work, it is sobering, but shapes you. Every home team officer who has faced this, knows this. Sometimes death is in the form of suicide, homicide, road traffic incidents, accidents, disasters, crime scene incidents, or crime scene photos. I had read about post trauma stress disorder (PTSD) whilst in psychology school, but personally experiencing it is a thing that is hard to psychologically prepare for. Your dinner becomes tasteless, you feel sad and you may experience aspects of PTSD in the form of 'intrusive thoughts' (when you have forceful images enter your mind and you try to stop it, but cannot). You often face this because the orang lama believes in the discipline of going to the ground (i.e. visiting the crime scene). Going to the ground, you sometimes see distressed families, spouses and kids. Why this insistence on going to the ground? It is not explained, it is just something you do. But you will get scolded if you do not go. I think it provides psychological fidelity – a sense of time, place, smells, motion, and people in the area. Perhaps it provides tacit insight, what the Germans call *fingerspitzengefühl* or a feeling in your fingertips, which captures sharp situational awareness and provides one with the ability to respond effectively and perceptively. Responding to the scene, sometimes you see blood, broken bone fragment, brain matter, and at times, white skull bits. Not your everyday sights.

This is especially true when officers respond to suicide cases; sometimes body parts are in different places, pieces. It is not easy to know

¹*Mata* refers to eye in Malay, but *mata-mata* generally means policeman (or watchman), where a patrolling policeman of the olden days was the "all eyes". (See <https://remembersingapore.org/2013/08/10/history-of-sg-police-force/>)

who this person was who had taken his or her life. No easy identification. Sometimes young police officers see a body with a persistently ringing phone in a pocket. It makes you wonder if a loved one is looking for them, despite the person thinking that he should leave this world. At times, outside of the police cordon, you see a person worriedly peering through the crowd, wondering if the commotion is about their loved ones. Indeed, sad moments. I think about what young police, CNB and SCDF officers have to go through when they encounter death like this. The bold exterior front they have to put on, when everyone is looking, as if they see this all the time (when they do not). As a psychologist responding to these kinds of incidents, I used to wonder why it would be different. Because you wear a blue Home Team uniform? I don't know if you can ever train for this. But police officers, SCDF officers, and many Home Team officers see these kinds of things or other equally distressful sights. They have my respect and gratitude. I don't think the public realises what these officers go through emotionally. It must be hard. It's hard to talk about this to friends and family, let alone the fact that you cannot. These experiences change them psychologically – and sometimes cynically too. For some, they become overprotective friends, lovers and parents.

A MOMENT OF TERROR

At one stage of my career, I was asked to interview arrested terrorists. That was another shaping moment. I worried if they would talk to me or if they would refuse to. We succeeded in interviewing them, and I realised many of them had been misled by leaders who gave them the wrong idea of religion. Learning about some of their plans was disturbing to me because they had no qualms about harming Singapore and the people living here. The experience of having to do these interviews was difficult initially because I had young children at the time and feared for my own safety. A senior officer teased me, saying that if I was worried, I would be provided a bodyguard (he meant it as a joke); but it wasn't amusing. As a non-trained civilian psychologist, I didn't remember signing up to do this. It was part exciting, part stressful but that's exactly the Home Team: never a dull day. As the days progressed, I realised this was important work for the safety of our own families. I also developed a new form of respect for the officers working for the Internal

Security Department. They are professionals who are on top of their game. Doing this made me have a deep sense of patriotism. It also opened up a whole new strand of research we started to do on the psychology of extremism, thought reformation ('brainwashing'), persuasion, influence, group dynamics and hate crimes.

SAME BUT DIFFERENT

As the years progressed, I had a role in the start-up and development of psychological services in CNB, Prisons, ICA, HTBSC, and SCDF. What did I learn? That I should not merely repeat what I did for the police for the other departments. That there is a need to respect differences in the deep cultures of each department. Each has its own unique historical, organisational, sub-cultural differences and operational differences. This is not too much of a surprise to me being a psychologist, because I know that even in our own personal homes, siblings can be different, despite sharing the same parents and being exposed to similar parenting experiences. The Home Team is like that. Same, yet different.

BEING 'CP'

As I became Chief Psychologist, I have had several inflexion points. What seems clear is that I am a Chief to the psychologists. This was initially daunting. How does a Chief behave? Should you sound clever? I didn't get the playbook. But the discovery was that I learnt over time that I have to also be Chief to the Ministry Headquarters Senior Directors and Directors, the Commissioners and commanders, and to appreciate their organisational and operational needs. This sometimes means that I cannot always be on the side of the psychologists all the time. With greater inter-ministry work, I further learned that the role includes being a partner to other Chiefs in other ministries. There is sometimes a need to peer-lead to push positive agendas for the whole of public service and government. And finally, as Chief I have to be a representative of Singapore with international partners and professionals on matters pertaining to the nature of psychology as it is applied within the ministry. When I was first asked to write the job description for Chief Psychologist MHA, it didn't dawn on me that the role is so multidimensional and complex.

FATHERHOOD AND AUTISM

The last 17 years have been more challenging because my wife and I have an autistic teenager. Raouf is autistic and low functioning (meaning he finds it difficult to do his daily chores such as bathing, cleaning up after toilet, eating, putting on his clothes). He was developing normally like most kids till about two, when we suspected that he was autistic since he wasn't engaging in eye contact, was often chasing his own shadow, often liked spinning objects and was quite sensitive to touching various things. We got him diagnosed early and put him through therapy. He is now 17 and a joy in our lives. Working in the police force, I realised many others have similar experiences coping with mental illness or mental disability. The point of sharing this is to raise awareness about disability. We can live with illness and disability and thrive in spite of challenges.

More than any other experience, Raouf has taught me about patience, being centred, being grounded and being aware of the hundreds who live with disability who get by. I have learnt about my own personal resilience and of others. I have learnt that I have very supportive leaders and supervisors in the police and the Home Team – who are understanding and accommodating. With the encouragement of my better half, I have further learnt that if you want something (in the disability sphere), you have to be a part of it, advocate for it and not wait for it to happen. Make it happen. There were many things we achieved in the disability ground because we pushed for it.

I have learnt through Raouf that while you worry about tomorrow, you never let today slip by. When you know that you may not be around for your child after you are gone, the thought of it is disheartening. But also, we learn to live the moment. And that every day has to be relished one day at a time. I have learnt that my being Chief means nothing to him. But being his father, playmate and understanding friend is everything. Titles, ranks and grades don't define us at the end of the day. Our values do, the relationships we make, do. The meaning of the work we do makes a difference. In this regard, my work has been a meaningful experience for me. I thank the Home Team for this.



ABOUT THE AUTHOR



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