

Effects of Ramadan Fasting on Health and Athletic Performance



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Chapter: Involvement in Religion and Self-Regulation: Explanations of Muslims' Affects and Behaviors during Ramadan

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Involvement in Religion and Self-Regulation: Explanations of Muslims' Affects and Behaviors during Ramadan

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Abstract

The present chapter aims to describe and explain the health-related, psychological, and social outcomes related to Ramadan fasting. Ramadan fasting appears globally related to positive psychosocial outcomes, which could be explained by the fact that Ramadan prescribes the health-promoting behaviors, confers social support, conforms people with Islamic doctrine, and promotes effective coping with stress. However, Ramadan can be also related to negative psychosocial outcomes, suggesting the existence of other factors impacting the fasting-related psychological outcomes. Indeed, while the personal forms of motivation in Islam and a positive God conception (i.e., adaptive religious involvement) seem related to adaptive psychosocial outcomes, the social form of motivation and a negative God conception (i.e., maladaptive religious involvement) seem related to maladaptive psychosocial outcomes. In addition, displaying more adaptive (and less maladaptive) religious involvement, women reveal more adaptive (and less maladaptive) psychosocial outcomes than men during Ramadan. In this perspective, the adaptive (or maladaptive) religious involvement, emerging from internalization processes of religious education, would facilitate self-regulation of affects and behaviors. Moreover, the benefits associated with Ramadan fasting could be explained by increasing self-control during the holy month of Ramadan, which in turn would increase self-regulation.

Key words

Internalization; Islam; Ramadan; Self-control; Self-regulation

Introduction

Ramadan represents one of the widest celebrated religious traditions in the world. As one of the “five pillars” of Islam, Ramadan corresponds to the ninth month of the Islamic lunar calendar during which Muslims fast. Literally, Ramadan fasting (*sawm* in Arabic) means self-refraining: It involves not only abstinence from eating, drinking, sexual intercourse during the daylight hours, but also a high control level of one’s thoughts, attitudes, and behaviors. Concretely, Muslims have to develop a closer relationship with Allah, strengthen ties with siblings, parents, friends, and restrain from touching, listening, saying, or looking at unlawful things, or going to evil places. From a spiritual standpoint, Ramadan can be considered as a time of self-reflection, because Muslims evaluate themselves in light of Islamic guidance, and a self-reformation time during which Muslims develop patience, humility, compassion, empathy, and generosity [1].

Religion, defined as “...cognition, affect, and behavior that arise from awareness of, or perceived interaction with, supernatural entities that are presumed to play an important role in human affairs” [2], is a psychosocial force capable of modifying human lives trajectories. Adherence in Islam-like in other religions such as Christianity, Judaism, or Buddhism [2] - is globally found to be positively (or negatively) related to positive (or negative) outcomes in terms of health [3,4], subjective well-being [3,5,6], and prosocial behaviors [7]. A few studies, however, stressed that religion can entail deleterious effects on mental and physical health in certain cases, especially when adherence to it is far from one’s personal and deep aspirations [8-11]. Since Quran mentioned that Ramadan fasting can promote individuals’ physical and mental well-being, several recent studies have attempted to examine this issue [12-14]. However, their findings displayed that Ramadan fasting may induce either positive or negative psychological effects according to the existence of specific factors (e.g., religious orientation, religious coping).

The aim of the present chapter is to describe and explain the relationships of Ramadan fasting with health, cognitions, affects, and behaviors. After describing such relationships, we will present the McCullough and Willoughby’s [2] self-regulatory control-process model of religious affects and behaviors, providing keys to understand the relationships between Ramadan fasting and its outcomes.

Ramadan, Mental Health and Well-Being

While certain studies examined the effects of Ramadan fasting on mental health [12], coping strategies [15-17], and decision making

[18], others examined the relationships of Ramadan experiences with other variables such as level of religiosity¹ [7], religious orientation [13,14], religious coping [19], and sex-related differences [13,19].

Psychological effects of Ramadan fasting

Research examined the relationship of Ramadan and mental health. In their attempt to examine the effects of Ramadan fasting and praying on mental health subscales (i.e., physical symptoms, anxiety and insomnia, social dysfunction, and depression) on Iranian university students, Amirfakhraei and Alinaghizadeh[12] measured self-reported mental health scores before and after the month of Ramadan in participants who (a) fasted almost always, some day (for amusement), or did not fast at all (voluntarily and due to religious or medical reasons), and (b) always, often, sometimes, or never prayed. The findings displayed that participants who fasted the whole month of Ramadan, even for amusement, had higher scores on all the mental health subscales after Ramadan than those who did not fast at all. Additionally, those who often or always prayed reported better mental health scores. Hence, fasting and praying appeared as effective rituals for increasing students' mental health. The authors explained such findings by the fact that religion may prescribe health-related behaviors, provide social support, promote positive feelings (i.e., optimism, perceived control), and create a meaningful purpose in life.

Research also examined the relationship of Ramadan with the use of coping strategies [15-17]. A coping strategy can be defined as "... the person's constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources" [20]. Akuchekian et al. [15] evaluated medical students for stress coping strategies before and after the holy month of Ramadan. The results displayed that Ramadan fasting decreased the use of ineffective coping strategies such as superstition, wishful thinking (i.e., kind of denial and maladaptive strategy), and self-medication. However, effective coping strategies, such as problem-solving focus (i.e., strategy directed to the stimulus causing stress response; e.g., plan-full problem solving), emotion focused strategies (i.e., strategy consisting in controlling and removing undesirable affects related to stress; e.g., positive reinterpretation), and other strategies were maintained. Such beneficial effects of Ramadan fasting were explained by the adherence to Islam-related recommendations, inciting Muslims to enhance regulation and control of their personal (e.g., discipline, punctuality) and social life (e.g., correcting one's interpersonal relationships). Considering Ramadan fasting as a coping strategy, the authors also suggested that Ramadan fasting may induce psychological adaptations with stress *via* the secretion of specific hormones (i.e., cortisol, beta-endorphin) rising during fasting.

Focused on elite athletes (archers) engaged in Ramadan fasting during high stake international competitions (e.g., London Olympics 2012), Roy and her colleagues [16,17] observed, through their qualitative investigations, that Muslim athletes developed a diversity of adaptive coping strategies. Concretely, the athletes had to deal with the physiological and psychological constraints of Ramadan fasting (i.e., loss of energy), while they had to prepare for the performance. To do so, they were led to (a) reorganize their training (e.g., decrease of training load) and nutrition (e.g., greater consumption of fluid during non-daylight hours), implement rest time, and control arousal in maintaining calmness, and (b) use psychological skills (e.g., increasing concentration on task) and spirituality. Their spirituality, characterized by their love for God and closeness with Him, served as a means of enhancing their mental strength.

Research did examine the relationship of Ramadan with decision making. Considering the existence of a direct link between the social mood and financial investments, some authors [18,22] attempted to know how Ramadan may influence investor decisions. All suggested the existence of a positive effect of Ramadan on feelings of optimism and happiness of Muslim investors, reflected by the increase of their investments during Ramadan. Moreover, using a specific finance index (i.e., stock market volatility), Al-Hajieh et al. [18] found that the beginning and the end of Ramadan were characterized by a greater synchronization of opinions, decisions, and mood of Muslim investors. This suggests that the ties within the Muslim community are the strongest at the start and the end of Ramadan fasting. More generally, such finding is compatible with the view that Muslim people strengthen their ties during Ramadan.

In this respect, the findings reveal that Ramadan fasting promotes positive psychological patterns including less anxiety, less depression, greater optimism and social identity, and better coping strategies. However, findings of other studies run counter to this view by providing evidence that Ramadan fasting can be associated with negative psychological patterns [23]. Kadri et al. [23] examined the dynamics of objective irritability (i.e., measured through semi-structured interview), subjective irritability (i.e., self-reported measures), self-reported anxiety, consumption of psycho-stimulants (coffee and tea), and duration of sleep during six weeks—from one week before the month of Ramadan (W0) to one week after this month (W5)—in smokers and non-smokers in Morocco. The data were collected one time a week. Different kinds of noteworthy patterns were found. Subjective irritability, objective irritability, and anxiety were globally lower in non-smokers than in smokers during Ramadan fasting, suggesting that smoking outside Ramadan could develop negative affects during Ramadan.

Regarding the dynamics of subjective irritability, objective irritability, and anxiety during Ramadan, differences were found between non-smokers and smokers. In non-smokers, the variables under study evolved in a stationary way over time, followed by either an increase (for subjective irritability, between W3 and W4) or not (for objective irritability and anxiety). In smokers, all variables increased over time (between W0 and W4). Moreover, a decrease was observed for subjective irritability (in non-smokers and smokers alike), objective irritability (in smokers only), and anxiety (in smokers only) after Ramadan (between W4 and W5). These findings indicate a greater non-stationarity and variability on the variables under study in smokers than in non-smokers, suggesting that smokers are more inclined to feel irritation and anxiety than non-smokers during Ramadan fasting, and that smokers are psychologically more vulnerable to Ramadan.

Along with the dynamics of affects under study, Kadri et al. [23] observed that the consumption of psycho-stimulants also increased over time in both groups, especially in smokers. A decrease of sleep duration was also recorded in both groups. Hence, Kadri et al. [23] attributed the negative effects during the month of Ramadan to the consumption of tobacco and caffeine. However, this explanation in itself is not sufficient since the authors also observed that, for each affective variable under study, non-smokers had a lower mean score than smokers in W0. The higher levels of negative effects in smokers during the rest of the year suggest the existence of other factors than Ramadan fasting, which is known to entail positive effects on psychological aspects [18,22]. Indeed, smoking was found to be positively

¹Even if the terms religiosity and spirituality are sometimes used interchangeably, they represent two distinct (but not exclusive) concepts. Religiosity refers to an adherence to a religion, involving predefined behaviors, rituals, whereas spirituality refers to the subjective relationship with supernatural entity such as a divinity [21]. Spirituality is associated with an existential search of life meaning. Such differences are not trivial since they imply specific psychological consequences. For instance, religious people were found to be highly conscientious, agreeable, self-controlled, and lowly open-minded and extraverted. By contrast, spiritual people appeared to be highly open-minded, and lowly conscientious and self-controlled [2].

related to disinterest in religion, a low-level of adaptive religious orientation, lower levels of positive experience of Ramadan, reduction in behaviors of Ramadan, and higher level of negative experience of Ramadan [14]. However, Kadri et al. [23] did not control such critical factors of religiosity in their study.

Critical Factors of religiosity implied in the Ramadan experience

Ramadan could entail either positive or negative effects on mental health and well-being depending on the existence of specific critical factors such as the level of religiosity, religious orientation, style of coping strategies, and sex differences.

Religiosity level and the Ramadan experience

The level of religiosity can influence the Ramadan experience. Akay et al. [7] recently examined the effect of religious festivals and religiosity levels on positional concerns (i.e., level of income and consumption compared to those of other people) of Turkish participants. The authors compared the most important day of Ramadan, the Night of Power (*Leylat al-Qadrin* Arabic), and a day outside Ramadan: They found that the positional concerns were lower during the Night of Power, suggesting that Ramadan could incite Muslim people to erase any social differences and be placed on an equal footing with other people. In addition, the level of positional concerns participants with a low level of religiosity was negatively affected by Ramadan, whereas it remained unaffected by Ramadan for participants with a highly level of religiosity. This suggests that only high religious people would follow the Islamic doctrine during the entire year, because it would be converted into personal values and goals.

Interestingly, the positional concerns are related to a specific emotion: Envy (*al-ghubtain* Arabic), which can be defined as an experience that "...arises when a person lacks another's superior quality, achievement, or possession and either desires it or wishes that the other lacked it" [24]. Envy is explicitly considered as a hostile emotion² in most of the major religions, because of its links with immoral thoughts, intentions, affects, or behaviors [25,28]. For instance, Prophet Muhammad stated: "...Keep yourselves far from envy, because it eats up and takes away good actions, like the fire that eats up and burns wood" (in Abu Dawud). The two findings of Akay et al. [7] could be viewed in the light of this conception: While reducing positional concerns during Ramadan in lowly religious people could be considered as a means of staying far from any feeling of envy, reporting no change in the positional concerns of highly religious people would reflect their effort to live far from envy not only during Ramadan but also during the rest of the year.

Religious orientation and the Ramadan experience

Religious orientation represents the way religious people commit to the religion. Three kinds of religious orientation can be distinguished: Intrinsic personal orientation (i.e., using religion as one's ultimate motivation), extrinsic personal orientation (i.e., using religion as a means to reach one's personal well-being), and extrinsic social orientation (i.e., using religion as a means to social ends). Khan and his colleagues [13,14] recently examined the relationships between the religious orientations and the experiences and behaviors of Ramadan of Pakistani students. The Ramadan behaviors correspond to the actions that Muslims should engage in during the month of Ramadan (e.g., reciting the holy Quran). The experience of Ramadan was considered as either a religious development experience (i.e., positive experience of Ramadan) or a difficult experience (i.e., negative experience of Ramadan).

The intrinsic personal orientation was found to be positively related to the positive experience of Ramadan ([13], $r = .46$; [14], $r = .44$), interest in religion ([14], $r = .43$), and Ramadan behaviors ([13], $r = .25$), and negatively related to the negative experience of Ramadan ([13], $r = -.15$). Similarly, the extrinsic personal orientation was found to be associated with the positive experience of Ramadan ([13], $r = .45$; [14], $r = .25$) and Ramadan behaviors ([13], $r = .25$). Concerning the extrinsic social orientation, it was shown to be positively related to the interest in religion ([14], $r = .28$) and the negative experience of Ramadan ([13], $r = .43$; [14], $r = .40$). Further analyses using the multiple regressions showed that the above-mentioned experiences of Ramadan predicted both the type of religious orientation and Ramadan behaviors [13]. More specifically, the positive experience of Ramadan predicted positively the intrinsic and extrinsic personal orientations as well as Ramadan behaviors, and negatively the extrinsic social orientation. The negative experience of Ramadan predicted positively the extrinsic social orientation and negatively the Ramadan behaviors. Moreover, the intrinsic and extrinsic personal orientations predicted positively, yet marginally ($ps \leq .08$), the Ramadan behaviors while the extrinsic social orientation predicted negatively such behaviors.

In sum, the positive experience of Ramadan, intrinsic and extrinsic personal orientations, and Ramadan behaviors could be considered as an adaptive religious psychological pattern, while the negative experience of Ramadan and extrinsic social orientation could correspond to a maladaptive religious psychological pattern. This is compatible with the general view that the intrinsic religious orientation corresponds to an adaptive implication in religion [30,31], but not completely compatible with the view according to which extrinsic religious orientation is maladaptive [30,31]. Khan and his colleagues' [13,14] findings revealed that the maladaptive religious pattern concerned only the extrinsic social orientation, not the extrinsic personal orientation—even if such orientation was less positively related to positive experiences of Ramadan than the intrinsic personal orientation.

According to Pargament et al. [31], religion could promote the construction of healthier traits of personality through an internalization process, which would have a positive impact on individuals' capacity to regulate their affects. In this perspective, an intrinsic personal religious orientation would better help deal with negative and stressful events when performing religious rituals such as praying and fasting, which would result in a better mental health and well-being. However, the potential negative effects of the extrinsic social religious orientation could be explained by Festinger's [32] theory of cognitive inconsistency. When an individual performs religious practices (e.g., praying, fasting) in front of others, or while imagining being observed by others, she or he inherently faces external reinforcement (i.e., reward), resulting in attributing the religious rituals more to reward than to her or him own attitude. Then, when faced with stressful events, people with extrinsic social religious orientation could not use religious rituals as effective coping strategies. Moreover, the possibility that the extrinsic personal religious orientation generates low positive psychological effects could be due to the fact that such religious orientation combines both a personal interest in religion and an extrinsic form of religious motivation, which may lead people to use religious rituals as effective coping strategies.

²Although the envy issue per se is beyond the scope of the present chapter, it is important to note that envy is not the hostile kind (*malicious envy*), which would motivate people to down others' standing in order to level the difference with their superiority [26-29]. Indeed, according to Van de Ven and his colleagues [26-29], there would be a more positive form of envy (*benign envy*) encouraging people to pull up their own standing. This type of envy would be related to positive outcomes [29]. Moreover, adhering to the conception that envy is only malicious could lead people to avoid achieving, performing, and reaching success in anticipating the possibility to be envied [25]. In this perspective, a whole society could stay far from any innovation.

Coping strategies orientation and the Ramadan experience

Another critical factor capable of influencing the experiences of Ramadan concerns the stress coping strategies. People are inherently exposed to stressful events and one of the effective ways to deal with stress could be religious coping [16,17].

Recently, Khan, Watson, Chen et al. [19] examined the relationships of Islamic religious coping with the experiences and behaviors of Ramadan in university students. Their findings displayed that positive Islamic coping (i.e., an adaptive religious coping; e.g., looking for a stronger connection with Allah when facing a problem in life) correlated positively with Ramadan behaviors ($r = .46$) and Ramadan experience ($r = .44$), and negatively with negative Ramadan experience ($r = -.18$). Positive Islamic coping appeared to predict Ramadan behaviors. In addition, punishing Allah reappraisal (i.e., maladaptive religious coping; e.g., believing being punished by Allah for bad actions when facing a problem in life) did predict higher levels of negative experience of Ramadan.

However, these findings do not match well the findings of earlier Pakistani investigations with Muslims, which display: (a) a clear relationship between negative religious coping and several indices of maladaptive adjustment [33-35], yet (b) an unclear relationship of positive religious coping with indices of adaptive adjustment [33,34], and (c) a positive relationship of positive religious coping with indices of maladaptive adjustment [35]. Such inconstancies could be explained by methodological differences. First, contrary to previous studies, Khan, Watson, Chen et al.'s [19] study was conducted during the month of Ramadan, which could have enhanced Muslims' commitment in Islamic recommendations, increasing thus the benefits of positive religious coping. Second, the unexpected positive relationship between positive religious coping and indices of maladaptive adjustment reflected specific psychological mechanisms implying religious patients [35].

Overall, all of the findings are consistent with those of studies run with mainly Christians and Jews showing that positive religious coping was positively associated with happiness and satisfaction with life [36], and negatively associated with anxiety [36] and depression [10, 36]. As for negative religious coping, it was found to be positively related to anxiety [36] and depression [10, 36]. Similarly, Hebert, Zdaniuk, Schulz, and Scheier [37] observed that negative religious coping predicted worse overall mental health, depressive symptoms, and lower life satisfaction in women with breast cancer.

In sum, given that the religious coping strategies refer to a conception of God, the affective and behavioral consequences associated with the type of religious coping strategies could be influenced by how people view God. In concrete, viewing God as a protector or a punisher could lead to positive or negative psychological outcomes, respectively [10,19]. The consistent links of the type of religious coping strategies with the experiences and behaviors of Ramadan support Pargament et al.'s [31] view according to which religion could foster health-related traits of personality, characterized by a high level of self-regulation.

Sex differences and the Ramadan experience

Some studies examined sex differences in psychological responses to Ramadan fasting [13,19]. All studies showed that women were more religious than men during Ramadan fasting. More specifically, women revealed a greater tendency to use positive coping strategies [19], to behave in accordance with the Islamic recommendations, and to have more positive feelings during Ramadan [13]. In addition, they reported lower negative experiences of Ramadan and levels of extrinsic social orientation [13]. These findings are compatible with findings of other studies conducted outside the month of Ramadan displaying that women are not only more committed to Islam than men³ [35,38, 39], but also more open-minded, altruistic, close to God [39], and satisfied with their lives⁴ [5]. Consequently, referring to Pargament et al.'s [31] assumption, Muslim women could have developed better self-regulatory skills in internalizing better their religious education.

Finally, the positive relationship of Ramadan with health, well-being, and social behaviors could be a *priori* explained by the fact that Ramadan prescribes (or proscribes) health-promoting (or health-comprising) behaviors, confers social support, conforms people with Islamic doctrine, and promotes effective coping with stress [12,15]. However, such assumptions could explain only a part of the psychological effects of Ramadan because this holy month was also found to be related to negative psychological outcomes, suggesting the existence of other factors. Indeed, research revealed that the way people experience Ramadan and typically behave during this month depended primarily upon their type of religious motivation and conception of God [14,19]. Indeed, the personal (or social) form of religious motivation was related to adaptive (or maladaptive) psychological implications, and viewing God as a protector (or a punisher) was related to better (or worse) adjustment with stressful events. In other words, the religious motivation and conception of God — which could be considered as features of the religious involvement emerging from the internalization process of religious education — may help or hinder self-regulation [31]. McCullough and Willoughby [2] recently argued that the links between religion and its positive outcomes could be partly explained by religion's abilities to foster self-regulation and control of the self.

Self-Regulatory Control-Process of Religious Affects and Behaviors

Based on Carver and Scheier's [41,42] control-process model of self-regulation, McCullough and Willoughby [2] proposed a model intended to explain the associations between religion and its outcomes. McCullough and Willoughby [2] posit that religion is associated with high self-regulation and self-control.

Self-regulation represents purposive processes involving self-corrective adjustments as needed, so that behavior stays on track for the purpose to which it is directed; such corrective adjustments would originate within the person [41,42]. Human behavior is considered as a continuing process of moving toward or away from goal values, and this process embodies the characteristics of feedback control.

A feedback loop includes four sub-functions: An input, a reference value, a comparison, and an output (see Figure 1). The input function corresponds to the perception of the current circumstances and situation in which the individual is implied, while the reference value is the goal set by the individual. The comparison function aims to confront the input function with the reference value, following

³It is, however, interesting to note that other studies conducted on Islam in Western countries found that men were more religious than women [35]. This would reflect the tendency of men to maintain a Muslim identity in a non-Islamic society.

⁴The literature is not consistent regarding the fact that Muslim women are related to more positive psychological outcomes than Muslim men. Abdel-Khalek [38] found that Muslim girls reported lower scores of happiness, mental and health, and higher scores of anxiety and depression than boys. Given that the findings involved adolescents only, Abdel-Khalek [38] explained the observed differences in referring to Fakhr El-Islam' [40] argument according to which a son in Arab countries has more freedom, authority, and responsibilities than a daughter.

which a discrepancy can be detected. The output function corresponds to the behavioral response to this potential discrepancy in terms of corrective adjustments.

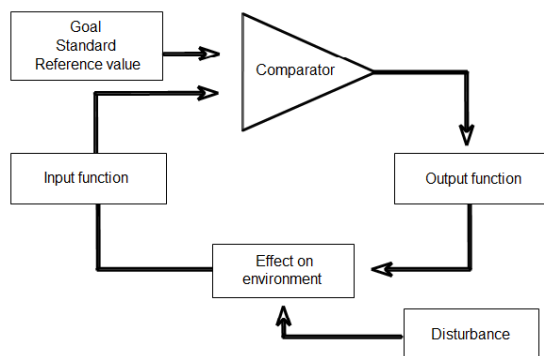


Figure 1: Schematic depiction of a feedback loop (the basic unit of cybernetic control), adapted from Carver and Scheier[41,42].

Self-regulation processes involve two kinds of feedback loop: A discrepancy reducing loop (or a negative feedback loop) and a discrepancy enlarging loop (or a positive feedback loop). A negative feedback loop is activated when a desired goal is pursued (e.g., doing good deeds). In this case, the individual is pursuing an approach goal [43] and the output function aims to reduce or eliminate the discrepancy that separates from this goal. By contrast, a positive feedback loop is activated when a non-desired goal or an “anti-goal” is pursued (e.g., avoiding being envious). In this case, the individual is pursuing an avoidance goal [43] and the output function aims to enlarge the discrepancy that separates from this anti-goal. For instance, attempting to follow more strictly the Islamic doctrine during the holy month of Ramadan, Muslim people could change their attitudes and behaviors [7]. More concretely, they could become more helpful with others (activating a negative feedback loop), as well as avoiding any ascending comparisons with similar others to stay far from any envy emotion (activating a positive feedback loop). This example illustrates how both feedback loops can be used concomitantly and complementarily.

The effectiveness of self-regulation processes would depend on specific abilities: The capacity of pursuing clear goals, monitoring discrepancies between one’s goals and one’s behaviors, and changing one’s behaviors. First, religion would select some goals and increase the importance of those goals for the self. Through internalization processes of religious teachings, people would develop goal systems hierarchically organized, from the most abstract goals to the most concrete goals. The most abstract goals are called “concept systems”, which refer to one’s ideal self (e.g., being a “good Muslim”). A concept system gives rise to behavioral aspirations called “principles”. A strong adherence to Islam (but also to Christianity and Judaism) was found to lead people both to embrace principles such as being respectful, helpful, responsible, polite, self-disciplined, and honoring elders, and to eschew other principles such as pursuing pleasure, having an exciting and varied life, being free, creative, and independent [44]. Principles suggest behavioral goals called “programs” (e.g., “distract oneself from hostile thoughts”), which lead to actions executed automatically called “sequences” (e.g., reading Quran).

Second, religion would promote monitoring, which involves comparator’s sensitivity to any discrepancy with the goal (see Figure 1). Religion would increase such sensitivity in increasing self-monitoring, perceived monitoring by God, and perceived monitoring by other people. Additionally, self-monitoring would be increased by the perception of being monitored by the evaluative audiences (i.e., God, others). The monitoring mechanisms are the components of self-control (i.e., quality of overriding or restraining prepotent impulses), which is a subset of the broader phenomenon of self-regulation. Recently, Carter, McCullough, and Carver [45] examined to which extent the relationship between religiosity and self-control was mediated by monitoring mechanisms. Results displayed that (a) religiosity predicted self-monitoring, monitoring by God, and monitoring by others, (b) monitoring by God and monitoring by others predicted self-monitoring, and (c) self-monitoring predicted self-control, while monitoring by others negatively predicted self-control. All findings supported authors’ expectations, except the last finding displaying a negative relationship between monitoring by others and self-control. The authors explained this unexpected finding could reflect a reactance effect (i.e., reject) regarding the fact to be monitored by others, given that no such effect was related to the perception of being monitored by God.

Third, religion would promote motivation to change behaviors. Perceiving discrepancies between one’s standing and one’s goals could lead to increase one’s religious goal-directed effort [46]. This is compatible with Brehm’s[47] reactance theory according to which a loss of control produces an attempt to regain it, as long as control is not viewed as impossible to regain. Moreover, people have many psychological and behavioral tools to change their standing in pursuing their goals: Praying, meditating, imagining, reading could be all potential tools provided by religion. Even if self-regulation refers to both negative and positive events, evidence that religion promotes motivation to self-change by fostering self-regulation could be provided by studies conducted on religious coping strategies [12,15-17,19,31,33]. These studies found the existence of kinds of strategies to cope with stressful events such as engaging in religious activity (e.g., praying, meditating), using a positive (e.g., attempting to resolve one’s problem in partnership with God) or a negative religious coping strategy (e.g., attributing one’s problem to God’s punishment).

Finally, McCullough and Willoughby [2] proposed the view that the physical, psychological, and social benefits associated with religion could be partly explained by self-control, which could improve in turn self-regulation. In line with this perspective, we think that Ramadan could generate positive psychological outcomes by increasing self-regulation. More specifically, the increase of spiritual and social interactions with Allah and other Muslims during Ramadan, respectively, could foster the selection of specific principles (e.g., being respectful, helpful) as well as the increase of sensitivity of monitoring mechanisms, what would increase in turn self-control, and thus self-regulation. Additionally, the motivation to change one’s behaviors could be provided by one’s spiritual closeness with Allah. However, such efficient self-regulatory mechanisms would need to be based on a positive internalization of religious teachings. Thus, the personal religious orientation, positive religious coping, or positive God conception could be considered as the emerging pattern of personality reflecting a positive integration of one’s religious education. This is supported by studies which show that intrinsic motivation regarding Islam were positively associated with self-control [48]. Conversely, the social religious orientation, negative religious coping, or negative God conception would reflect a failure in the integration of religious education.

Conclusion

This chapter has attempted to describe and explain the health-related, psychological, and social outcomes related to Ramadan fasting. This chapter is composed of two parts. The first displays that Ramadan fasting is globally related to positive psychological and social outcomes, which may be explained by the fact that the holy month would prescribe health-promoting behaviors, confer social support, conform people with Islamic doctrine, and promote effective coping with stress [12,15]. However, Ramadan is also related to negative psychological outcomes [23], suggesting the existence of other factors implied in the relationship of Ramadan fasting with psychological outcomes [13,14,19]. Indeed, the personal forms of motivation in Islam and positive God conception are related to adaptive psychological implications, whereas the social form of motivation and negative God conception are associated with maladaptive psychological implications. The second part of this chapter, based on McCullough and Willoughby's [2] assumptions, shows that the benefits associated with Ramadan fasting may be explained by self-regulation, which was improved by increasing self-control. The closeness to Allah and social interactions with others, which are enhanced during Ramadan, are considered as key factors potentially responsible for an increase in self-control. The efficiency of such self-regulatory mechanisms would also be based on adaptive religious involvement, emerging from one's internalization of religious education.

The knowledge of psychological self-regulatory processes implied during Ramadan is far from complete. Although Ramadan represents one of the most celebrated religious traditions in the world, only very few studies have been interested in Ramadan in the field of social or cognitive psychology. This chapter has revealed the predominance of quantitative investigations over qualitative investigations, predominance which may have limited our understanding of the complexity of self-regulatory processes in Ramadan. Further research should borrow qualitative methods in order to examine complexity of such processes. Moreover, although the quantitative studies attempted to examine the relationships of Ramadan fasting with psychological outcomes, only Kadri et al.'s [23] study pursued such a goal in borrowing a dynamic approach. Because self-regulation of affects and behaviors is so complex [2], and because any causal mechanism in isolation is inadequate to characterize the resultant phenomenon in all its complexity [49], future research should invest the dynamical approach to examine religious psychology issues [45].

The dynamic systems approach is not new in social psychology since some pioneers displayed how the laws of this approach can be applied to this field [49-51]. The goal of this approach is to describe and explain the change, thereby enabling better understanding of complexity of phenomenon under study. Recent studies conducted in the field of sport social psychology demonstrated the interest in pursuing such an approach [52-53]. Further research should also focus on the influence of Ramadan on the fluctuations of affective, cognitive, and motivational variables in an achievement context such as sport, which has sometimes been considered as a kind of natural laboratory because it implies short contest units that lend themselves well to rigorous investigations [54].

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