DO LEADERSHIP STYLES (MLQ) INFLUENCE LEADERS' HEALTH STATUS IN RELIGIOUS ORGANISATION IN CENTRAL JAMAICA?

BOURNE, P. A.[1*] – PETERKIN, V. M. S.[1]

[1] *Department of Education and Training, Vocational Training and Development Institute, Kingston, Jamaica.*

**Corresponding author*
e-mail: paulbourne1[at]gmail.com

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Abstract. For centuries, the issues of health and leadership have been examined as two separate phenomena, which mean that health was never a factor in leadership research. Leadership was conceptualized and studied within the constructivist paradigm, focusing on major leadership types-transformational, transactional and laissez-faire. However, a researcher had developed a Multifactor Leadership Questionnaire (MLQ) to quantitatively examine the aforementioned leadership types. Health, on the other hand, was initially measured from an objective perspective, which has been somewhat replaced by self-reported assessment as developed by RAND corporation-SF-36. This study is a response to the recommendations from researchers for studies to be undertaken in the area of the health of leaders, which would place health in the leadership discourse. The current study will examine the health status of leaders who serve in certain religious organizations in Central Jamaica (St. Catherine, Clarendon and Manchester). Given the enormous responsibility of leaders in religious and educational institutions, an objective study of their health is critical to understanding and planning for these cohorts. This study seeks to provide empirical findings that will close the gaps in: (1) the health status of leaders in Jamaica, (2) health status and its influence on leadership styles among a group of leaders in religious, and (3) whether leadership styles should be considered a potential social determinant of health. A standardized instrument using the MLQ, SF-36 and other items will be used to collect data, and these will be entered into the Statistical Packages for the Social Sciences. The data will be analyzed using descriptive statistics, bivariate and multivariate analyses, and factor analysis.
Keywords: *health, leadership, MLQ, SF-36*

Introduction

The concept of leadership predates its definition, and Bass and Bass (2008) postulated that the written principles of leadership can be traced to early civilization displayed in the Egyptian hieroglyphs (2300 BCE). Bass and Bass argued that "From its infancy, much of the study of history has been the study of leaders, what they did and why they did it". However, in the last century, the issue of leadership has expanded to include new conceptualizations of leaders, measures of leadership styles, and attributes of leadership to include personality. Irrespective of fundamental changes in the leadership discourse, its trajectory has added much to the discipline in comparison to the early civilization. Nevertheless, Bass and Bass (2008) chided scholars and researchers for including genetics or the health of leaders as a part of the way forward in the 21st century. Despite the instruction of Bass and Bass to researchers on the leadership phenomenon as it relates to "what they do" and "why they do it", the former matter continues to be dominant. The matter of "what they do" is aptly encapsulated in Michalos (2004) study. The leadership discourse has empirically established the role of leaders on the well-being of subordinates (Michalos, 2004); but the information is

sparing on the influence of leadership styles of leaders on their health status and whether leadership style is a potential determinant of health.

The issue of health of leaders is equally important as the well-being of the general populace; yet there are limited studies on the matter, particularly in the Caribbean among religious leaders. Traditionally, health research focused on the general populace (Wilks et al., 2008; Lamb, 2004; MIND, 2004; Smith and Kington, 1997a; 1997b; Smith and Waitzman, 1994; PAHO, 1990). Variations to the population health have been documented in the literature to include the elderly (Erber, 2005; Hambleton, et al., 2005; Costa, 2002; 2000; Eldemire, 1997; 1996; 1995a; 1995b; 1994; Crimmins et al., 1994; McCallum et al., 1994; Sokolovsky, 1983); but, studies in the area of the health status of leaders are still lacking and this should not be the case, especially within the context that the leader is critical to the creation of vision and dreams for their subordinates. As such, this study is correlational research and it seeks to fill the gap in the literature by examining the objective as to whether leadership style among other correlates influences the health status of leaders who serve in certain religious organizations in Central Jamaica (St. Catherine, Clarendon, and Manchester). This research is timely as it will provide a platform for understanding the role of leadership style on leaders' health using a positivistic theoretical framework and offers whether it is a potential social determinant of health.

Theoretical framework

The theoretical framework that is used for this study is 'Pathways of personality to psychosocial aspects and physical aspects of health-related quality of life (HRQoL)' which was developed by Huang et al. (2017). They found that health status is directly correlated to personality traits and that personality characteristics influence a two-dimensional health-related quality of life (HRQoL in *Figure 1*). The two dimensions of health-related quality of life are: (1) the physical aspect, and (2) the psychological aspect (Huang et al., 2017). The HRQoL has been widely used by other scholars and different personality characteristics have been used over the years (Wrosch and Scheier, 2003; Watten et al., 1995; Wilson and Cleary, 1995). The pathways of personality to psychosocial aspects and physical aspects of health-related quality of life have been quantified and examined and have provided a scientific framework for the examination of factors that influence health, especially personal characteristics. The personality characteristics (personal attributes) include income, education, and personality traits. A study by Farin and Meder (2010) revealed that 5% of the variance in HRQoL was explained by income; 0.4-3.8% by health conditions (diseases) and cardiac risk factors, and 2% by personality traits. Another research objectively found a significant statistical relationship between personality traits and general health (Srivastava and Das, 2015). Personality traits were conceptualized from the perspective of neuroticism, optimism, mastery and a sense of coherence, which correlated with psychosocial HRQoL (*Figure 1*). Studies from Smith and Spiro (2002) as well as Mischel and Shoda (1995) have empirically established that personality characteristics, which include biological factors, behaviour, cognition, goals adjustments, motivation, and perception, were correlated with health, which is in keeping with 'Pathways of personality to psychosocial aspects and physical aspects of (HRQoL) theoretical framework. For this study, personal characteristics of health include, religiosity, age, gender, marital status, and leadership styles, which are examined by way of an objectivistic epistemology as their influence on self-reported health status.

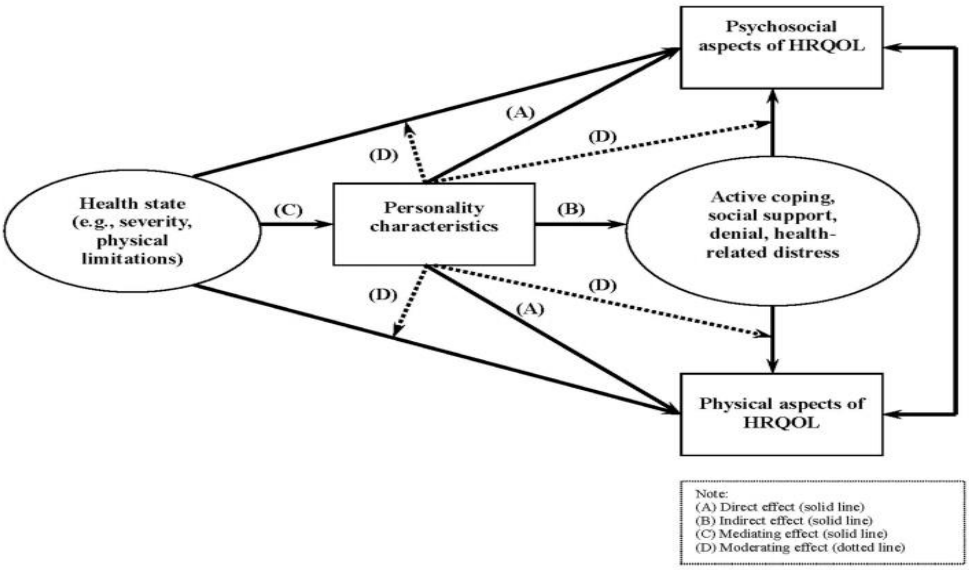

Figure 1. *Pathways of personality to psychosocial aspects and physical aspects of HRQoL. Source: Huang et al. (2017).*

Health

Health is a critical component in the life expectancy of all living organisms, including humans. So, when Bass and Bass (2008) opined that "The genetic factor needs to be taken into account in any complete examination of leadership"; this explains the rationale for the many studies evaluating health determinants of a population and sub-populations (Bourne and Eldemire-Shearer, 2010; Bourne, 2008; WHO, 2008; Graham, 2004; Wilkinson and Marmot, 2003; Dunn and Dyck, 2002). The dependent variable in Huang et al. (2017) work is health; consequently, this is the critical variable in the discussion and so must be examined before personality characteristics. In 1884, Englishman Francis Galton, both a mathematician and medical doctor, researched the 'physical and mental functioning' of approximately 9,000 people between the ages of 5 and 80 years (Erber, 2005). A mathematician like his predecessor, Adolphe Quetelet, Galton wanted to measure the human life span and the physical and mental functioning of people. Despite changes in human development and the shifts in world population toward demographic ageing-people living beyond 65 years (ILO, 2000; Wise, 1997), the issues of health status, and general well-being, are rarely examined in leadership literature. From the mortality tenet, demographers have captured and measured health status, by using life expectancy and diseases. Life expectancy may be an adequate indicator of the length of life and from a biomedical perspective a yardstick for health status; but such a construct is not in keeping with the conceptual definition furnished by WHO (2008) that "health is a state of complete physical, mental and social wellbeing and not merely the absence of diseases or infirmity". This set the platform for expanding the health discourse from biological operationalization.

It should be noted that this conceptual definition which is in the Preamble to the constitution of the WHO which was signed in July 1946 and became functional in 1948, according to one scholar from the Centre of Population and Development Studies at Harvard University, is a mouthful of sweeping generalization, that is difficult to attain, and at best it is a phantom (Bok, 2004). This paper recognizes this debate and

understands its importance but unfortunately will not be providing information hereafter as it is not the purpose of this study. Is there a shift taking place in demography as well as leadership to include leadership styles as a social determinant of health, which is an expansion of the correlates of health status as identified by Smith and Kington (1997a). Bass and Bass (2008) recommended the discourse of leadership should include health; but this despite this fact, leadership styles have not been brought into the discourse of social determinants of health. Lamb (2004) commenced their chapter on health demography with the following statement: "Health is a leading characteristic of the members of a population, akin to other demographic and socioeconomic characteristics". They persisted that "...increased life expectancy…has shifted the focus of population health from quantity of life to the quality of life". Embedded in this thesis is the importance that demographers must now place on the quality of life as against the quantity of life (life expectancy). Thus, the length of life expectancy cannot be used as an indicator of health as the absence of ailments is not necessarily an indicator of a 'good' quality of life experienced by an individual. The Jamaica Survey of Living Conditions (JSLC) (1997-2002) revealed that the aged populace has the highest rate of number of days spent in health care, and they share the highest proportion of illnesses and ailments with children (less than 5 years). These are indicators that longer life, which are not necessarily spent as healthier days. With the measures related to functioning being increasingly an issue for the elderly, the well-being of this group must be studied from a demographer's vantage point.

Spiegelman (1980) outlined the importance of health in demography, which explains his rationale for the inclusion of 'Health Statistics' in chapter 7 of the text Introduction to Demography. In this, the author furnished definitions, and emphasized the significance of "attitude toward health maintenance". Still little attention was given to "quality of health care" outside of morbidity. One of the ironies of this text is the author's recognition that "Health statistics encompasses not only morbidity statistics but also data relating to its socio-economic correlates including health attitudes and utilization of health services" (Spiegelman, 1980). The reality is, since the elongated definition of WHO in 1946, this has begun a reservoir of discussions around the area of health, and many studies have emerged on self-reported health or subjective well-being instead of the objective approach by way of mortality, morbidity and life expectancy. The subjective assessment of health (self-reported) has been examined and validated as a scientific way of evaluating well-being (Bourne and Eldemire-Shearer, 2010; Diener, 2000; 1984; Bourne, 2009a; Wilks et al., 2008; Idler and Benyamini, 1997). Diener (2000; 1984) argued that a strong statistical correlation existed between subjective well-being (self-reported well-being) and objective well-being (Idler and Benyamini, 1997). This supported the rationale for the usage of self-reported health to assess the well-being or general health status of people, which accounts for the usage of a self-reported cross-sectional probability survey by scholars at the University of the West Indies, and their endorsement by the Ministry of Health, Jamaica (Wilks et al., 2008) and by the rest of the world (Organisation for Economic Co-operation and Development, 2019). Using self-reported health data for Jamaica, Caribbean scholars have examined the good health status of the general population, women, older people, and rural people (Bourne et al., 2013; Bourne, 2009b; 2009c; Bourne and Rhule, 2009). Bourne et al. (2013) found that 38.1% of rural-aged Jamaicans reported having at least good health compared to other studies that are presented in *Table 1*.

Table 1. *Studies across the globe on good health status.*

Category	Good health status (in %)	Explanatory power (R^2)	Nation
Bourne (2008)	-	39.3	Jamaica
Bourne and McGrowder (2009)	82.8	38.4	Jamaica
Bourne (2009b)	-	32.0	Jamaica
Bourne (2009c)	48.1	5.0	Jamaica
Bourne and Rhule (2009)	84.7	32.0	Jamaica
Hambleton et al. (2005)	17.8	38.2	Jamaica
Wilks et al. (2008)	35.4	-	Jamaica
ODPHP (2014)	90.5%	NA	United States
The Conference Board of Canada (2019)	88.5	NA	Canada
McCallum et al. (1994)	71.5	NA	Australia
OECD (2019)	44.2	NA	Latvia

For this study, self-reported general health was developed by RAND Corporation (SF-36) and was used to assess the general health status of leaders who serve in certain religious organizations in Central Jamaica. This will be fully discussed in the design and method section of this paper. This takes the discussion to the determinants of health or the personality characteristics of health outcomes.

Determinants/personality characteristics

The personality characteristics referred to by Huang et al. (2017) extended beyond income and education, and some scholars labelled these social determinants of health including the World Health Organization (WHO) (Bourne and Eldemire-Shearer, 2010; WHO, 2008; Hambleton et al., 2005; Kelly et al., 2007; Graham, 2004; Wilkinson and Marmot, 2003). Long before the conceptualization of social determinants of health, Engel, a medical practitioner, forwarded a biopsychosocial model that integrated biological, psychological and social factors in the treatment of mentally ill patients (Engel, 1981; 1979; 1977a; 1977b; 1960). He proposed that the treatment of an ill patient must include biological issues as well as social and psychological matters. This was a conceptual theorizing and the broad definition of health made by the World Health Organization in 1948 cannot be singled and objectively assessed (Crisp, 2008). He believed so much in the model that it would help in understanding sickness and provide healing that he introduced it to the curriculum of Rochester Medical School (Dowling, 2005; Brown, 2000). This approach to studying and practising medicine was a paradigm shift from the biomedical model that was popular in the 1980s and 1990s. Engel's biopsychosocial model was a subjective one; but, it laid the platform for social determinants of health.

Dating back to the 1970s, other scholars have referred to the personal characteristics of an individual as health determinants and their works were objective (Grossman, 2017; Bourne, 2008; Smith and Kington, 1997a; 1997b). Grossman (2017) was the first to use econometric analysis and establish many correlates of health income, medical cost, education, gender, age, etc. Grossman's model was written as a mathematical equation, which read as:

$$H_t = f(H_{t-1}, G_o, B_t, MC_t, ED) \qquad \text{Eq. (1)}$$

The various abbreviations mean: H_t refer as current health in period t, stock of health (H_{t-1}) in the previous period, B_t are smoking and excessive drinking, and good personal health behaviours (including exercise-Go), MC_t are the use of medical care, education of each family member (ED), and all sources of household income (including current income). Then, in the 1990s, Smith and Kington (1997a) expanded on the social

determinants (determinants) of health to include age, gender, family background or genetic endowments. Hence the expanded model of health determinants is expressed in Equation 2:

$$H_t = H^* (H_{t-1}, P_{mc}, P_o, ED, E_t, R_t, A_t, G_o) \quad \text{Eq. (2)}$$

The abbreviations used in Equation (2) are as follows: current health status H_t as a function of the stock of health (H_{t-1}), price of medical care P_{mc}, the price of other inputs Po, education of each family member (ED), all sources of household income (E_t), family background or genetic endowments (G_o), retirement-related income (R_t) and asset income (A_t,). The expansion of the social determinants of health (health determinants) did not cease with Smith and Kington (1997a) as Bourne using secondary data established a model that had many more determinants than its predecessors did. Bourne (2008) model encapsulated the environment, marital status, area of residence, psychological conditions, ownership of a house, occupancy, crime and victimization, and so forth, which are captured in Equation 3 below:

$$W=f(P_{mc}, ED, Y, A_i, E, G, MS, AR, P, N, O, H, T, R_t, V) \quad \text{Eq. (3)}$$

The well-being of the Jamaican elderly (W) was determined by the cost of medical care (P_{mc}), the educational level of the individual, household income (Y), age of the respondents (A_i, where i is 65 years and over), the environment (E), gender of the respondents (G), marital status (MS), area of residents (AR), positive affective conditions (P), negative affective conditions (N), occupancy per room (O), ownership of home (H), paying property taxes, retirement related-income and crime and victimization. Bourne's (2008) work found that the psychosocial determinants of health accounted for 39.3% of the variance in good health status compared to 38.2% in a similar study conducted by Hambleton et al. (2005). Hambleton et al. (2005) grouped the determinants of health into four categories: (1) historical socioeconomic, (2) current socioeconomic, (3) current lifestyle risk factors, and (4) diseases (*Table 2*). Those determinants are in keeping with the biopsychosocial model proposed by Dr. Engel (Engel, 1981; 1979; 1977a; 1977b; 1960), which is highlighted in *Table 2*.

***Table 2**. Potential determinants of self-reported health status, study of historical and current predictors of self-reported health in elderly persons, Barbados (1999-2000).*

Predictor group	Individual predictors in each predictor group
Historical socioeconomic indicators	Education, occupation, childhood economic situation, childhood nutrition, childhood health, number of childhood diseases
Current socioeconomic indicators	Income, financial means, household crowding, living alone, currently married, number of people in the household, number of children living outside the household, number of siblings living outside the household, number of other family and friends living outside the household
Current lifestyle risk factors	Body mass index, waist circumference, categories of disease risk, nutrition, smoking, exercise
Disease indicators	Number of illnesses, number of symptoms, Geriatric Depression Scale score, number of nights in hospital in 4 months, number of medical contacts in 4 months

Source: Hambleton et al. (2005)

In a study by Cohen and Wills (1985), it was found that a statistical correlation existed between marital status and well-being (Smith and Waitzman, 1994). Koo et al. (2004) work empirically established that being married was 'good' for psychological well-being among old people. Another study, using a sample of 1049 Austrians ages 14

years and over, by Prause et al. (2005) found that married individuals reported better subjective health-related quality of life index (8.3) than divorced persons (7.6) or singles (7.7). Smock et al. (1999) concurred with Prause et al. (2005) by reporting a direct relationship between married women and economic well-being. Another determinant of health of importance is religion or religiosity. Religion has been empirically established as a determinant of subjective well-being (Bourne, 2008; Jurkovic and Walker, 2006; Krause, 2006; Moody, 2006; Graham et al., 1978) as well as objective well-being (House et al., 1982). Kart (1990) postulated that religion influences well-being through restrictive behavioural habits as well as eating practices of people such as no smoking, or drinking alcohol, and eating a plant-based diet. Religion is one of the determinants of health that will be examined in this paper. The fact is, personality characteristics identified by Huang et al. (2017) are simply determinants of health; and empirically they influence both physiological and psychosocial health and well-being. Like former studies on the health determinants of health, leadership style was never considered among the social determinants (determinants) of health. This study is forwarding that leadership style should be brought into the health-determinant discussion. The researcher is proposing that this answers the call declared by Bass and Bass (2008) as the way forward in leadership research. Bass and Bass (2008) advanced that:

> "*Leadership is an interaction between two or more members of a group that often involves a structuring or restructuring of the situation and the perceptions and expectations of the members. Leaders are agents of change, whose acts affect other people more than other people's acts affect them, [which does not indicate that the leader's behaviour is not influenced by his/her followers]. Leadership occurs when one group member modifies the motivation or competencies of others in the group. Leadership can be conceived as directing the attention of other members to goals and the paths to achieve them. It should be clear that with this broad definition, any member of the group can exhibit some degree of leadership, and the members will vary in this regard*".

Leadership as defined by Bass and Bass (2008) has some characteristics that can be noted here. These characteristics include competence, followership, foresight, influence, and change agent, which are classified in leadership styles. Lunenburg and Ornstein (2021) posited that leadership can be categorized into six major groups. These are: (1) Moral leadership; (2) Contingency Approach Leadership; (3) Participative Leadership; (4) Instructional Leadership; (5) Transformational Leadership; and (6) Managerial Leadership. For centuries, leadership styles were conceptual phenomena. Then, in the 1980s, Bass and Avolio designed a psychometric instrument that objectively assessed self-reported leadership styles, and this is widely used today (Bass and Avolio, 2004; 1990). The instrument is referred to as the MLQ, which will be discussed in the design and methods section of this work. As such, this study will examine three leadership styles (transformational, transactional and laissez-faire) because these can be objectively evaluated by the MLQ.

Transformational leadership

Bass and Bass (2008) defined transformational leadership as "…Leaders who motivate their followers to do more than the followers originally intended and thought possible". They continued that "The [transformational] leader sets challenging

expectations and achieves higher standards of performance". From Bass and Bass' perspective, these leaders possess certain characteristics such as (1) inspiration motivation, (2) intellectual stimulation, (3) personal creativity, (4) individualized consideration, and (5) idealized influence. These leaders are not focused on themselves or taskmasters, they 'transform' the individual and situation for a visionary outcome. Yukl (2006), on the other hand, postulated that the transformational leader petitions the moral psyche of his/her followers and inspires them into action. Hence both Yukl and Bass and Bass believed that the transformational leader ignites and motivates the follower into action beyond that which he/she can see or think. The transformational leader is a change agent, and this includes the socio-physical environment, habits, situation, objects and practices. Bass and Bass (2008) referring to Burns' definition of transformational leadership, wrote "…[The transformational leader] (1) raises the followers' level of consciousness about the importance and value of designed outcomes and way of reaching them; (2) gets the followers to transcend their self-interests for the sake of the team, organization, or larger polity; and (3) raises the followers' level of need on Maslow (2015) hierarchy from lower-level concerns for safety and security to higher-level needs for achievement and self-actualization". The transformational leader masters the art of people's psyche, and the socio-physical milieu, and can incite actions by way of tailoring his/her vision in a marketable way to the followers.

Yukl (2006) opined that "…the [transformational] leader transforms and motivates followers by (1) making them more aware of the importance of task outcomes, (2) inducing them to transcend their self-interest for the sake of the organization or team, and (3) activating their higher-order needs", which explains Bass and Bass' theorizing that the transformational leader transmits his/her vision in an individualized way to each follower so that they accept this idea. Like the transformational leader, Bass & Bass indicated that statistically there is no difference between transformational and charismatic leaders. This means that there are clear similarities between both leaders. However, they postulated "…The charismatic leader is likely to be transformational, but it is possible, although unlikely to be transformational with being charismatic" (Bass and Bass, 2008). This explains why the Multifactor Leadership Questionnaire (MLQ), developed by Bass and Avolio (2004), used the term transformational leadership and why charismatic leadership is not named because of the statistical premise of no significant difference between them both. Transformational Leaders, therefore, create a personal position for each follower to 'buy into' and it is this rationale that accounts for widespread change in landscape, which is the case in the public health sector (Carlton et al., 2015). These leaders' visions become the mindset of the followers and by way of inspiration, the followers execute the vision through a commitment to the idea and tasks as the followers go beyond the mere exchange and reward scenarios (Bass and Bass, 2008; Lunenburg and Ornstein, 2008; Aarons, 2006). Furthermore, in the same section dealing with transformational leadership, Bass and Bass introduced and explained transactional leadership.

Transactional leader

Bass and Bass (2008) opined that "Transactional leadership emphasizes the exchange that occurs between a leader and followers". The concept of transactional leadership is embedded in the root word 'transaction' or an act of exchange. Therefore, the transactional leader can offer something to the followers in exchange for their involvement, the matter here being reward and performance. Bass and Bass continued

that "This exchange involves direction from the leader or mutual discussion with the followers about requirements to reach desired objectives". Transactional leadership occurs when there is a bargain between the leader and the follower on a stated outcome, and an agreed reward is offered by the leader that is accepted by the follower before the commencement of the task. Hence in transactional leadership team members accept the offer of the leader to complete a specific job or task (Amanchukwu et al., 2015). Simply put, transactional leadership is a task-oriented leadership style (Bass and Bass, 2008; Aarons, 2006). Like Yukl (2006), Bass and Bass outlined the purposes of task-oriented leaders as follows: (1) an objective-which deals with the introduction of the procedures, agenda and attention to task; (2) communication-in which specific information is sought and new ideas are encouraged; (3) the clarification of communication in an attempt to reduce confusion; (4) accomplishments-to review task; and (5) testing for consensus of objectives, interpretation, evaluation and readiness of decisions (Bass and Bass, 2008). Undoubtedly, there is a clear distinction between transactional and transformational leadership which has been empirically established and objectively measured. Using psychometric properties Bass and Avolio (1990) were able to assess transactional as well as transformational leadership, which is by way of the self-administered questionnaire referred to as the MLQ. In addition, Aarons (2006) found that there is a moderate direct statistical association between both leadership styles ($r=0.545$, $P<0.001$). Transactional and transformational leadership styles are not the only ones objectively measured by Bass and Avolio (2004; 1997); this also includes laissez-faire leadership styles.

Laissez-faire

Laisses-faire is of French origins and means 'leave us alone'. The terminology emerged in the 18th century at the height of the Industrial Revolution, and it is attributed to M. Le Gendre. According to Bass and Bass (2008), "a research study by Bradford and Lippitt conceived of laissez-faire leadership as descriptive of leaders who avoid attempting to influence their subordinates and who shirk their supervisory duties". They continued "Such leaders are inactive and have no confidence in their ability to supervise. They bury themselves in paperwork and stay away from their subordinates", which is simply leaving subordinates alone to do their own thing. This means that laissez-faire leaders are inactive people who divert from taking responsibility as well as making difficult decisions. Bass and Bass (2008) contended that in a laissez-faire leadership style, followers or subordinates are highly motivated people who are self-driven and self-goal-oriented. Bass and Avolio (1990) used the MLQ to assess laissez-faire leadership styles by using 10 items. These will be further discussed in the design and methods section of this paper. Using the MLQ, Bass and Bass noted a moderate-inverse statistical correlation between laissez-faire and transformational leadership styles.

Personality and leadership styles

Examining traits of leadership (or personal attributes of leadership), Bass and Bass (2008) identified that personality traits were one such characteristic. They reviewed approximately 31 studies on the area of personality of leaders, and so believed that personality was a factor (determinant) of leadership traits and research. This fact is well-studied in leadership studies (Northouse, 2021; Hassan et al., 2016; Kirkpatrick and

Locke, 1991). Hassan et al. (2016), used five personality traits or Big Five Personality traits: (1) agreeableness, (2) conscientiousness, (3) emotional stability, (4) extraversion, and (5) openness to situations or experience), found a strong significant statistical relationship between those traits and leadership styles (Judge et al., 2002). Furthermore, Alkahtani et al. (2011) empirically established that four of the Big Five components emerged as predictors of leadership styles (i.e., conscientiousness; emotional stability; extraversion; and, openness to situation or experience). Many of these studies have employed a quantitative research design, which is the rationale for the usage of an objective epistemology in the current work.

Materials and Methods

For this survey instrument (questionnaire), a large volume of data was stored, retrieved, and analysed using the Statistical Package for the Social Sciences (SPSS) for Windows version 25.0 (SPSS Inc; Chicago, IL, USA). Before the data was entered into the SPSS software, a codebook was developed and used as the template for the data entry. All the 103 items on the questionnaire were coded from variable, variable name, level of measurement, and numeric code. This allowed for the ease of entry and uniform data entry process that provided an avenue of check and balance in the data entry process. Descriptive statistics were performed on the demographic data and percentages, frequency distributions, central tendencies, measures of dispersion, and examination of distributions (for skewness). Descriptive statistics allowed the researcher to meaningfully describe the many pieces of data collected that provide background information on the study (Gay et al., 2012). Statistical significance was determined by a p-value less than or equal to five percentage points (≤ 0.05) a two-tailed test. Multivariate analysis (logistic binary regression) was used to model factors influencing the good health status of the sampled respondents, and exploratory factor was used to determine the suitability of the indexations such as leadership styles and self-reported health status.

Confirmatory factor analysis was used to validate and establish the quality and reliability of the MLQ-5X and SF-36. The components and sub-components of the MLQ-5X and the SF-36 were assessed based on high-scale validity coefficients ($\alpha > 0.7$) to evaluate the content and construct validity and the internal reliability coefficient. Following the assessment of the assumptions of principal component analysis for both scales (i.e., MLQ-5X and SF-36), confirmatory factor analysis was used to determine the validity and reliability of the instrument inclusive of Varimax rotation, factor loading, reliability consistency, and normality of items (Watkins, 2018; Tabachnick and Fidell, 2007; Hair et al., 2006; Brillinger et al., 2004; Kaiser, 1974; 1970; 1960; Horn, 1965; Bartlett, 1954; 1950). Eigenvalues, of at least one, were used to determine the estimated number of factors that were investigated in a common factor analysis as well as the graphical representation by way of a scree plot (Izquierdo et al., 2014; Hair et al., 2006; Carroll, 1978). Determining sample size is a critical part of the science in survey research methodology; so, it was carried out for this dissertation. A sample frame was designed to ensure equal representation of the selected sample with those of the targeted population, and a sample was computed based on an estimated population of 1,589 leaders, with a 3% margin of error and a 95% confidence level. A 3% margin of error was chosen based on the recommendation of the statistical literature in the computation of sample size. Survey Monkey's sample size calculator was used to compute the actual

sample size of 639 leaders. Hence, a simple random sample was used to select a prospective respondent from the stratum. Based on the computed probability for the sample respondents, the research team used five in every ten, two in every ten, and three in every ten leaders across St Catherine, Clarendon, and Manchester, respectively. Of the 639 prospective respondents, the final response for this dissertation was 45.4% (i.e., 290/639=0.4538 or 45.4%).

Logistic binary regression was used to examine selected demographic variables (age, gender, religiosity, marital status) and self-reported leadership style and how these influence the self-reported good health status of leaders who serve in certain religious organizations in Central Jamaica (Equation 4):

$$H = f(A, G, MS, R, L) \qquad \text{Eq. (4)}$$

where H denotes the health status of leaders who serve in certain religious organization churches in Central Jamaica and this is determined by the gender of the respondents (G), marital status (MS), age of the respondents (A), religiosity (R), and leadership style (L). The predictive power of the health model is tested using the Omnibus Test of the Model to examine the goodness of fit of the model. The correlation matrix was examined to ascertain if autocorrelation (or multicollinearity) existed between variables. The Odds Ratio (OR) for the interpretation of each significant variable and Wald statistics were used to determine the magnitude (or contribution) of each statistically significant variable in comparison with the other. A standardized questionnaire was developed to evaluate whether or not leadership styles are correlated with health status and if this should be included as a new health determinant. This was administered between August and September 2019. The general instrument comprised two major established questionnaires (The Multifactor Leadership Questionnaire (MLQ) and Self-reported health status (SF-36)), which were designed by Bass & Avolio and RAND Corporation respectively. In addition to those items, the researcher included items on health-care-seeking behaviour, health conditions and demographic characteristics. The instrument consists of 6 sections and comprised of 103 questions. Sections A & B dealt with items from the MLQ (i.e., questions 1-36); Section C detailed items from the SF-36 (i.e., questions 37-72), Section D was on healthcare seeking behaviour (i.e., questions 73-77), Section E examines self-reported medical history/health conditions/illnesses (i.e., questions 78-94), and Section F addresses the demographic characteristics (i.e., questions, 95-103). The demographic issues were: (1) place of leaders (certain religious organizations in Central Jamaica), (2) gender, (3) age, (4) marital status, and (5) religiosity (frequency of monthly church attendance).

Multifactor Leadership Questionnaire (MLQ)

The Multifactor Leadership Questionnaire (MLQ) was developed by Bass and Avolio (1990) and has been widely used since as an evaluation of leadership types or styles (Rowold, 2005; Bass and Avolio, 2004; 1997; 1990). The MLQ examines leadership styles from the perspective of transformational leaders, passive leaders, transactional leaders and non-leadership behaviour (Bass and Avolio, 2004; 1997; 1990). Rowold (2005) evaluating the MLQ opined that it is extensively used by scholars and experts to assess leadership styles from three main areas; these are transformational, transactional and non-leadership scales. MLQ uses eighteen items to assess the three previously mentioned leadership styles. The 18-item Likert scale ranges from 0 to 4 for

the MLQ version and only five of the 18 items are detailed in *Table 3* (Rowold, 2005; Bass and Avolio, 2004; 1997; 1990). The leadership interpretations of the 18-item in the MLQ are presented in *Table 4*. These items are used to establish the three main leadership styles as displayed in *Table 5*. The eighteen items encompass three leadership styles: transformational, transactional and laissez-faire., which are presented in *Table 5*. Before the entry of the items in the main leadership styles, some computations are carried out on the 18-item from the MLQ. The computations of the items on each leadership component are as follows: Idealized Influence (Attributed) total/2=Management-by-Exception (Active) total/2=Idealized Influence (Behavior) total/2=Management-by-Exception (Passive) total/2=Inspirational Motivation total/2=Laissez-faire Leadership total/2=Intellectual Stimulation total/2=Individualized Consideration total/2=Contingent Reward total/2.

***Table 3**. Items on the Multifactor Leadership Questionnaire (MLQ).*

No.	Question
1	I avoid getting involved when important issues arise.
2	I talk about my most important values and beliefs.
3	I seek differing perspectives when solving problems.
4	I discuss in specific terms who is responsible for achieving performance targets.
5	I wait for things to go wrong before taking action.

***Table 4**. MLQ items: Their leadership interpretations.*

Category	Question
1	Laissez-faire
2	Idealized Influence (Behavior)
3	Intellectual Stimulation
4	Contingent Reward
5	Management-by-Exception (Passive)
6	Inspirational Motivation
7	Individualized Consideration
8	Idealized Influence (Attributed)
9	Management-by-Exception (Active)

***Table 5**. MLQ leadership styles and items of measurement.*

Category	Items on instrument
Transformational	Inspirational motivation
	Idealized influence (attributed)
	Idealized influence (behaviour)
	Intellectual stimulation
	Individualized consideration
Transactional	Contingency reward
	Active management-by-exception
	Management-by-exception (passive)
Laissez-faire	Laissez-faire

36-item short form survey (or SF-36) & definition of term

Ever since the World Health Organization (WHO) coined a definition of health which expanded from the traditional medical conceptualization, there has been a growing concern as to a single index to measure this new broad perspective forwarded by the WHO (Crisp, 2008). The WHO definition of health has laid the mantle for an index that would measure quality of life or general well-being and not simply illness or physical well-being. It was John Flanagan who introduced the quantification of health that expanded on the earlier usage of life expectancy, mortality, and illness to self-assessed health status of people or population (says who?). RAND developed a 36-item Short Form Health Survey (SF-36) to assess the quality of life. Table 5 below comprises a set of questions on physical activities, social activities, role activities, bodily pain,

mental health, vitality, and general health perceptions. The 36-item scale that comprised 8 sub-scales is presented in this table. Another important property of the SF-36 is its scoring, which is detailed below in *Table 6*. Ware and Sherbourne (1992) opined that the SF-36 was developed to assess health status in a Medical Outcome Study (Roth et al., 2009; Ware et al., 1995; McHorney et al., 1993). Leadership Styles is a personal attribute of the leader or manager in conducting him/herself. This approach includes ways of motivation, strategies employed, programmes used, tools and techniques applied to execute his/her vision. For this study, Bass and Avolio (1990) instrument (MLQ) was used to determine selected leadership styles practised by Board members in this study (i.e., transactional, transformational and laissez-faire).

***Table 6**. Sub-scales of SF-36 and their measurements.*

Scale	Number of items	After recording, average the following items
Physical functioning	10	3, 4, 5, 6, 7, 8, 9, 10, 11. 12
Role limitations due to physical health	4	13, 14, 15, 16
Role limitations due to emotional problems	3	17, 18, 19
Energy/fatigue	4	23, 27, 29, 31
Emotional well-being	5	24, 25, 26, 28, 30
Social functioning	2	20, 32
Pain	2	21, 22
General Health	5	1, 33, 34, 35, 36

Health is defined general well-being of the individual as reported by him/her, which is in keeping with the definition of the World Health Organization (WHO, 1948). This is self-assessed health as reported by the individual using an instrument designed by RAND Corporation, which is referred to as SF-36. General good health is the summation of items 1, 33, 34, and 36, after code, and reverse coding items 33 and 35 (*Table 6*). The maximum value for general health is 500, with scores ranging from 0, being the minimum to 500. In addition, for this study, good health is referred to as self-rated excellent and very good, which is coded as 1 and 0 for otherwise, or an individual whose score is at least 375 for the summation of general health status. Furthermore, the classification and computations of the various components of health as performed by RAND Corporation for the SF-36 are presented in *Table 6*. Only five items (1, 33, 34, 35, and 36) are used to assess general health status. This variable is operationalized as a dichotomous one (1=Good to excellent, 0=Otherwise).

Results and Discussion

Table 7 presents the demographic characteristics of the 290 sampled respondents. Of the sampled respondents, the majority were females (60.6%), married (66.2%), attended church at least 4 times monthly, and the average age was 49.6 years±16.6 years.

***Table 7**. Demographic characteristics of sampled respondents (n=290).*

Category	Frequency [N] [Percentage (%)]
Gender	
Male	114 (39.4)
Female	176 (60.6)
Marital status	
None/Single	58 (20.0)
Married	192 (66.2)
Engaged to be married	9 (3.1)
Widowed	9 (3.1)
Divorced	17 (5.9)
Separated	2 (0.7)
Visiting	3 (1.0)

Religiosity	4 times monthly (range=15 times monthly)
Age	49.6 years±16.6 years, 95%CI: 47.1-52.1 years

Self-reported health status

Using SPSS, five items were subjected to Principal Components Analysis (PCA). Before performing PCA, the suitability of data for factor analysis was assessed. The descriptive statistics revealed that the mean scores were normally distributed, with mean values ranging from 2.31 and 4.3. The item with a value of 2.60 can be concluded as not relevant to the instrument. However, the Cronbach alpha for the 5-item was 0.717, which means that they may be generally suitable for constructing a single variable, self-reported general health status. Inspection of the correlation matrix revealed the presence of many coefficients of 0.3 and above. Despite many bivariate correlation values being more than 0.3, none was strongly correlated with each other and this means that each variable measures a relatively different item. The Kaiser-Myer-Oklin value was 0.732, exceeding the recommended value of 0.6 (Kaise, 1974; 1970) and the Bartlett's Test of Sphericity (Bartlett, 1950) reached statistical significance (<0.0001), supporting the factorability of the correlation matrix (Hair et al., 2006).

A close look at the total Variance Explained table revealed the presence of one component having an Eigenvalue exceeding 1, explaining 47.7% of the variance in self-reported health status. This means the items that fall below this break can be discarded or approached with caution in the analysis. The components table shows the loading of each factor on the component. Communalities show the number of variables accounted for in the component captured by each variable. That is, how much of the variance in each of the original variables is explained by the extracted factors? The Communalities for this analysis show commonalities for six variables below 0.50. Higher communalities are desirable. If the commonality for a variable is less than 50%, it is a candidate for exclusion from the analysis because the factor solution contains less than half of the variance in the original variable, and the explanatory power of that variable might be better represented by the individual variable. Results of rotation show the factor loadings that result from Promax rotation. The rotated factors are just as good as the initial factors in explaining and reproducing the observed correlation matrix in the Total Variance Explained. Also, the cumulative percentages are the same. The reliability statistics revealed an alpha coefficient of 0.72 which is just above the Nunnally's 0.7 threshold. This is acceptable based on the reliability statistics reported in reviewed journals and books (Brillinger et al., 2004; Tabachnick and Fidell, 2007; Kaiser, 1974; 1970; 1960; Horn, 1965), which offers a rationale of the suitability of all five items in assessing a single construct referred to as self-reported general health status.

Leadership styes-MLQ

Using Principal Components Analysis (PCA), 18 items were assessed for their suitability and appropriateness in measuring a construct called, Leadership styles. Before performing PCA, the suitability of data for factor analysis was assessed. The descriptive statistics and it was revealed that the mean scores were normally distributed, with mean values ranging from 0.82 and 3.4. The item with a value of 2.60 or less may not be relevant in constructing the leadership index. However, with a Cronbach alpha for the 18-item MLQ being 0.752, which denotes that they may be generally suitable for constructing a single variable, and so further analysis is required for a single decision to

be taken on the matter. On examination of the bivariate correlations of the items in the MLQ, most of them were below 0.43 with being at most 0.46. These correlations indicate that each other and this means that each variable measures a relatively different item in the MLQ. The Kaiser-Myer-Oklin value was 0.682, exceeding the recommended value of 0.6 (Kaiser, 1974; 1970) and Bartlett's Test of Sphericity (Bartlett, 1950) reached statistical significance (<0.0001), supporting the factorability of the correlation matrix (Hair et al., 2006). The Total Variance Explained of items in the MLQ and it was revealed that five components have Eigenvalues exceeding 1 and that these explain 58.4% of the variance in self-reported actual leadership styles. The Scree plot revealed a clear break after the fifth component, after which the graph flattens. This means the items that fall below this break can be discarded or approached with caution in the analysis.

The Communalities analysis of items in the MLQ shows the number of variables accounted for in the component captured by each variable. That is, how much of the variance in each of the original variables is explained by the extracted factors? The Table of Communalities for this analysis shows commonalities for three variables below 0.50. Higher communalities are desirable. If the commonality for a variable is less than 50%, it is a candidate for exclusion from the analysis because the factor solution contains less than half of the variance in the original variable, and the explanatory power of that variable might be better represented by the individual variable. Results of rotation show the factor loadings that result from Promax rotation. The rotated factors are just as good as the initial factors in explaining and reproducing the observed correlation matrix in the Total Variance Explained. Also, the cumulative percentages are the same. The reliability statistics revealed an alpha coefficient of 0.752 which is just above the Nunnally's 0.7 threshold. In addition, based on the values for the overall items and the sub-components of the MLQ (*Table 8*), the MLQ is suitable and appropriate for use in measuring leadership styles (i.e., transformational, transactional and laissez-faire) for the current study. This is acceptable based on the reliability statistics reported in reviewed journals and books (Tabachnick and Fidell, 2007; Brillinger et al., 2004; Horn, 1965; Kraiser, 1960; 1958), which offers a rationale for the suitability of all 18 items in assessing leadership styles by way of the MLQ.

***Table 8**. Reliability analysis of sub-components of MLQ.*

Category	Items on instrument	Cronbach alpha
Transformational	Inspirational motivation	0.762
	Idealized influence (attributed)	
	Idealized influence (behaviour)	
	Intellectual stimulation	
	Individualized consideration	
Transactional	Contingency reward	0.566
	Active management-by-exception	
	Management-by-exception (passive)	
Laissez-faire	Laissez-faire	0.470
Total		0.752

Predictors of self-reported and health status

Table 9 presents the binary logistic regression of potential predictors of the self-reported health status of leaders who serve in certain religious organizations in Central Jamaica. Using logistic regression analysis, of the seven variables, 3 emerged as statistically significant predictors of self-reported good health status of leaders who serve in certain religious organizations in Central Jamaica (transformational leadership:

OR=19.241, 95%CI: 3.225-114.8, R2=47.6%; Transactional leadership: OR=0.143, 95%CI: 0.31-0.664; and age of respondents: OR=0.954, 95%CI: 0.911-0.999). Based on the Nagelkerke R Square, 48% of the variance in good health is explained by the three variables. The Self-reported good health status model of leaders who serve in certain religious organizations in Central Jamaica has a statistically significant predictive power (Model $\chi2(8)=29.095$, $P<0.001$; Hosmer and Lemeshow goodness of Test $\chi2=3.453$, $P=0.903$), and correctly classified 71.5% of the sample. Based on the Wald statistic values, leadership style contributes more to the good health status of leaders than their ages. Leaders who exhibit a more transformational leadership style are 19.2 times more likely to report good health than those with a transactional leadership style (0.857 times less likely to report good health status). Furthermore, age is inversely correlated with self-reported good health status (OR=0.945). This means that as the leader becomes older, he/she is 0.46 times less likely to report good health status.

***Table 9**. Binary Logistic Regression: Predicting self-reported health status of leaders who serve in certain religious organization in Central Jamaica.*

Category	B coefficient	S.E.	Wald statistic	Sig.	OR	CI (95%)
Leasership style						
Laissez faire leadership	0.570	0.428	1.775	0.183	1.768	0.765-4.088
Transformational leadership	2.957	0.911	10.529	0.001	19.241	3.225-114.797
Transactional Leadership	-1.946	0.784	6.164	0.013	0.143	0.031-0.664
Gender (1=Female)	-0.644	0.682	.893	0.345	.525	0.138-1.997
Religiosity	-0.326	0.371	.772	0.380	.722	0.348-1.494
Age	-0.047	0.023	4.007	0.045	.954	0.911-0.999
Marital status			6.954	0.138		
None	20.577	17931.9	.000	0.999	863712767.1	0.000-
Married	23.105	17931.9	.000	0.999	10825630507.6	0.000-.
Common-Law	25.047	17931.9	.000	0.999	75475510977.9	0.000-
Divorced	1.233	44011.7	.000	1.000	3.433	0.000-
Reference group (visiting)						
Constant	-24.958	17931.9	.000	0.999	.000	
-2Log Likelihood					61.295	
Model $\chi2$ (df=), P value					29.095 (8), P < 0.001	
Nagelkerke R Square					0.476	
Overall correct classification					71.6%	
Correct classification of self-reported good health status					63.0%	
Correct classification of cases of not self-reported good health status					77.5%	

The predictive self-reported good health status model, using logistic regression analysis can be written as Log(probability of reporting good health status) = -24.958 + 2.957 (Transformation Leadership Index) - 1.946(Transactional Leadership Index) - 0.047(Age of respondents) or based on Equation 5:

$$LnH = (2.957Q - 1.946X - 0.047A)$$

$$H = e^{(2.957Q - 1.946X - 0.047A)} \qquad \text{Eq. (5)}$$

Where, H is self-reported good health status, Q is the transformational leadership index, X denotes the transactional leadership index and A is the age of the respondent.

Discussion

Traditionally, the leadership discourse was centred around theories of leadership, types of leadership, definitions, roles and responsibilities, patterns of behaviour,

personal attributes or characteristics, power and authority, subordinates or followers, and the least in the health of leaders (Bass and Bass, 2008). In reviewing the leadership literature, a plethora of studies have been conducted on the previously mentioned areas, but Bass and Bass found six studies that have examined health and leadership. It should be noted that although Bass and Bass's handbook was published in 2008, all the identified studies on health and leadership date to the 1930s-to-1940s. The reality is health is an unpopular area in leadership discourse and accounts for a recommendation of Bass & Bass that it should be among the way forward in the discipline. On the other hand, public health is frequently the area in which many of the studies on health have emerged including the health of people who are served by leaders in the health profession. Furthermore, on reviewing works on social determinants of health (Bourne and Eldemire-Shearer, 2010; Kelly et al., 2007; Graham, 2004; Wilkinson and Marmot, 2003) or even the wider determinants of health (Grossman, 2017; Bourne, 2009b; 2008; Bourne and McGrowder, 2009; Hambleton et al., 2005; Smith and Kington, 1997a, 1997b) none was found that examined the possibility of leadership styles being a potential determinant. This study has objectively established that leadership style is a potential determinant of health, and this is the introduction of a new paradigm in health discourse.

Some studies have found at most 40% of the variance in self-perceived health is accounted for by the social determinants of health or health determinants (*Table 1*). Such findings highlight that changes in people's health status are yet to be highly explained by way of the identified social determinants. Even when physical illnesses (conditions) are included among the social determinants of self-reported health, in Hambleton et al. (2005) study, only 38.2% of the variance in health was explained and this speaks to the vast gap left for more studies. Undoubtedly the unexplained variance of self-reported good health requires more research. This study has brought leadership style as a personal characteristic of health as well as a potential health determinant (social determinant). The current finding has empirically revealed that leadership style is a potential health determinant. Leaders who depict more transformational leadership styles (personality characteristics) were found to be healthier than those who possess other leadership characteristics. A transformational religious leader is changing the lives of his/her subordinates, but he/she is equally adding value to their general well-being (life expectancy). With this study finding that transformational leadership style contributes 19.2 times (Odd ratio) more to report very good (or excellent health), this means that personality characteristics of these leaders aid in changing others' well-being as well as theirs. This finding supports Dr. Engel's theorizing that healthcare must be from the perspective of a biopsychosocial model or characteristics (Engel, 1979). Here it is noted that a personality characteristic (leadership style) is a factor of good health of religious leaders, and this justifies being identified as among the way forward in viewing healthcare treatment.

On the other hand, more transactional leaders are playing an inverse role in their general health. Such leaders, reward-based and manage-based personality types, are not aided by their demeanour and are more retarding their life expectancy as can be deduced from this study. Studies by Romager et al. (2017), Hassan et al. (2016), Mousavi et al. (2016) and Judge et al. (2002) have all empirically established the statistical relationship between personality type and leadership styles. Hassan et al. (2016) argued that: (1)"Do leaders emerge due to their personality? (2) What traits predict the emergence of leaders in a group, their advancement to higher levels and their effective performance? (3) Is it

important to remember that some traits relevant to one criterion are relevant not to the other?" Leadership style is not merely a human relations issue; it is a psychological matter that has other implications. One's leadership style is a personality characteristic that explains changes in well-being, life expectancy and good health. Bass and Bass (2008) outlined that "Transactional leadership emphasizes the exchange that occurs between a leader and followers", which also includes the psychological return of leadership style to the leaders. Leaders who display transactional leadership traits are destroying their existence by accommodating such persona. A transactional leadership style is, therefore, detrimental to well-being and this speaks to the psychology of leadership, and it translates into health retardation. Unlike a transformational leadership style that aids the well-being of all includes the leader. Undoubtedly, there is a social psychology to leadership that emerges from the current study in that how one leads others affects his/her well-being that was not initially brought into the leadership or health discourse. Transformational leaders' mindset creates a positive atmosphere that replicates to others as well as themselves. These leaders' positive mindset and personality traits foster holistic living including good health. On the other hand, transactional leaders may believe that a singular activity of transaction and return, and this lack of acceptance that leadership places a role in one's well-being must be incorporated into the discourse of health and leadership. Therefore, there is a psychology of leadership that transcends beyond mere leadership function to well-being, and health practitioners need to recognize this possibility.

Conclusion

This study theorises that leadership style should be considered a potential determinant of health (social determinant) that offers further explanation of people's well-being (health) that cannot be discounted any longer. The evidence is that leadership style plays a role in influencing well-being and adds another element to the discourse of social determinants. In addition, with leadership styles being a determinant of health, the discourse on health and healthcare must be broadened to facilitate the current reality, especially for leaders. Within the context that leadership can be taught (Johnson et al., 1998), it follows that this research holds the key to broadening the scope of understanding how to treat ill-health patients.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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