ORIGINAL ARTICLE

Extracurricular leadership development programme to prepare future Saudi physicians as leaders

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Abstract

Objective: To describe and evaluate an innovative approach for developing leadership skills in a cohort of medical students through an extracurricular programme.

Methods: The study was conducted at King Abdulaziz University, Jeddah, Saudi Arabia, from April to June of the academic year 2014-15, and comprised medical students from all batches. Mixed-method design was used to evaluate the leadership development programme. Pre- and post-tests were conducted to assess students' learning and their satisfaction was evaluated at the end of the programme. Focus groups were conducted to assess the programme's impact on participants' behaviour. Data analysis was done using SPSS 16.

Results: Of the 55 participants, 45(82%) responded to the evaluation survey. Of them, 29(65%) reported intended changes in their leadership practices immediately after the programme, with 8(28%) of them reporting more than one change. The mean students' satisfaction with the overall performance of the speakers and programme organisation was high at 4.12±0.91 and 4.54±0.89, respectively.

Conclusion: Early experience of the leadership development programme produced positive results. An intense programme analysis is required to fully understand this significant organisational need.

Keywords: Leadership, Development, Medical students, Evaluation. (JPMA 66: 688; 2016)

Introduction

The development of leadership models for college students was started long time ago. Inclusive selection of co-curricular leadership programmes sparked an interest to future leaders, thus leadership educator offered training programmes that complemented leadership qualities.[1] Improper healthcare was attributed to inadequate medical leadership qualities, poor communication, disempowerment of staff and patients, and cessation among doctors and managers. Thus, doctors are essentials for significant fundamental changes.[2]

Despite the fact that the Accreditation Council for Graduate Medical Education (ACGME) included "working with team" under necessary content related to patient care, O'Connell and Pascoe reported that there is still little literature on teamwork and leadership in medical education.[3] Furthermore, the importance of leadership training re-emerged when the ACGME identified "work effectively as a member or leader of a health care team or other professional group" as part of the general interpersonal skills and communication capability for all residency programmes.[4]

Despite being integral competencies to the development of a physician leader, effective communication, negotiation, conflict and project management, and team building are not specifically addressed in almost all the current medical student curricula. In response to this, as well as to the desire of medical students at the University of Kentucky, a leadership development programme (LDP) with students-centred educational methods was created.[5] This was also the case at King Abdulaziz University (KAU), Saudi Arabia, which added an extracurricular LDP aimed at developing leadership skills. The current study was planned to describe and evaluate an innovative approach for developing leadership skills in medical students.

Subjects and Methods

The study was conducted at King Abdulaziz University (KAU), Jeddah, Saudi Arabia, from April to June of the 2014-15 academic year, and comprised medical students from all batches. The LDP's establishment, facilitated by the Creativity and Talent Committee (CTC) of the university's Faculty of Medicine (FOM), had four stages: designing, selection, implementation and evaluation. During the designing stage, leadership competence, learning outcomes, relevant instructional methods and assessment methods were identified after consultation with senior faculty and reviewing literature.[5,6] Small-group learning sessions, theory-based and hands-on

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workshops, and participants-prepared seminars were chosen to be instruction methods.

During selection, a call for application to the programme had resulted in 116 (34 male and 82 female) applicants from the targeted four years (2nd through 5th year). A total of 60 students were selected to be enrolled in the LDP according to a structured interview using a content validated checklist constructed by the CTC members. The academic faculty with qualifications and experience in leadership and who represented role models for students were called to participate in the LDP conduction. The LDP lasted for 8 weeks and it was conducted during the students' activity time (protected two hours per week).

During LDP implementation, a portion of each class was devoted to active learning, whereby students discussed and applied (as simulation or role play) a new leadership skill. The students submitted a written assignment every week and discussed it with the tutor.

Mixed-method design was used to evaluate the LDP according to the four levels of the educational outcomes that were described by Kirkpatrick,[7] and Sargeant et al.[8] Students' reaction to the programme was anonymously assessed through an end-of-the-programme evaluation survey. To assess students' learning from the programme, tests were applied before and after each workshop, and compared in line with literature.[9] In addition, one of the leadership skills rating scales was applied to the students before and after completing the programme and compared in order to assess students learning from the programme.[10] The content of evaluation survey and pre- and post-tests were validated by three experts in the field of medical evaluation.

Focus group discussions (FGDs) were conducted after two months of completion of the programme to assess the effect of the LDP on students' behaviour. A follow-up questionnaire was distributed among students to explore their perception of such behavioural changes. FGDs have been described by Patton to be a suitable data source for such type of studies.[11] Face validity of these questionnaires was checked with the students while its content was validated by a group of experts.

SPSS 16 was used for data analysis. Cronbach's alpha was used to calculate the internal consistency and it was interpreted according to Cronbach and Warrington.[12] Normal distribution of data was checked through Kolmogrov-Smirnov test. Chi-Square with linear trend test was used to compare the frequency between the groups. Paired t-test was used to compare the students' perception before and after the individual workshop and the programme. The results were expressed as mean and standard deviation (SD). Effect size was calculated and interpreted according to Cohen to measure the pre-/post-differences in means in terms of SD units.[13] The effect size was considered 'small' if it was between 0.20 and 0.50; 'medium' between 0.50 and 0.80; and 'large' at 0.80 or higher. $p<0.05$ was considered significant.

Four FGDs were conducted with the students (male and female) two months after the LDP completion. Individual FGD lasted 45 to 60 minutes and notes were taken by the principal investigator and one of the co-authors. The content of the FGDs was analysed as was described by Graneheim and Lundman.[14]

Results

Of the 116 applicants, 60(51.7%) were enrolled in the LDP. Of them, 55(91.7%) completed the programme and

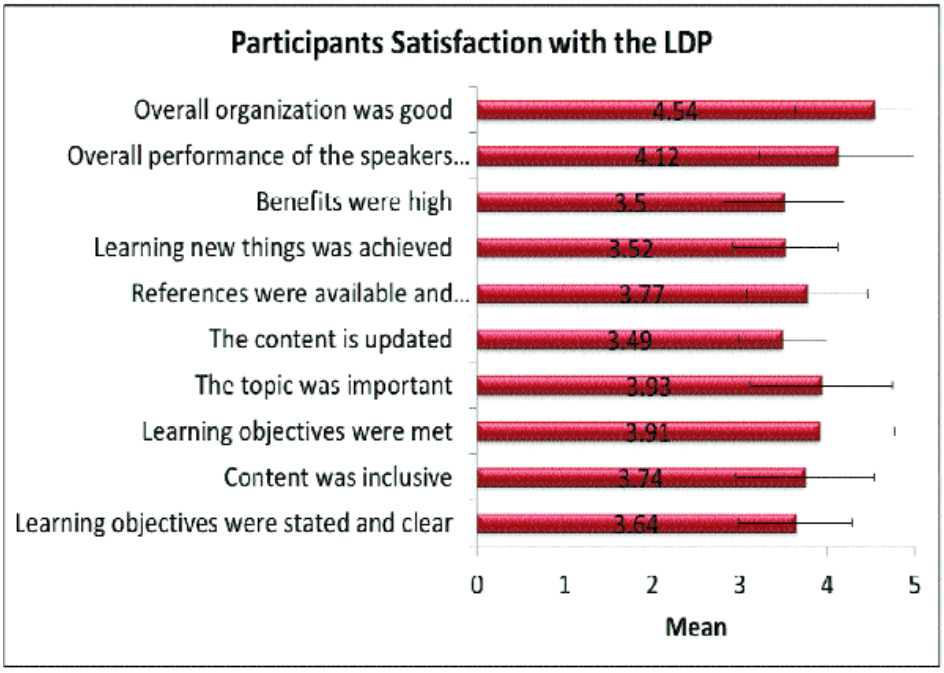

Figure-1: Participants satisfaction with LDP. Cronbach's alpha of the survey items is 0.697. Means are based on Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree).

Table: Effect of the Leadership development programme (LDP) on self-reported learning of the participants.

Workshops	ILOs Mean† (SD)					††Reliability
	ILO1	ILO2	ILO3	ILO4	Overall	
Workshop 1 (n=53)						
Before	3.98 (1.18)	4.18(1.25)	3.26(1.29)	3.18(1.11)	3.56(1.21)	0.89
After	4.76(0.43)*	4.72(0.45)*	4.44(0.7)*	3.9(0.88)*	4.45(0.63)*	0.69
§Effect size	0.66	0.43	0.91	0.64	0.55	
Workshop 2 (n=47)						
Before	3.10(.98)	3.06(1.05)	3.31(1.06)	3.25(1.2)	3.18(1.09)	0.82
After	4.21(0.85)*	4.02(1.01)*	4.25(0.87)*	4.53(0.65)*	4.26(0.95)*	0.88
Effect size	1.12	0.95	0.87	1.05	0.99	
Workshop 3 (n=45)						
Before	2.95(0.73)	2.97(0.96)	3.26(0.71)	2.53(0.94)	2.92(0.82)	0.77
After	4.57(0.49)*	4.77(0.42)*	4.66(0.63)*	4.53(0.50)*	4.63(0.55)*	0.73
Effect size	2.19	1.87	1.97	2.12	2.08	
Workshop 4 (n=50)						
Before	4.04(0.85)	2.74(0.83)	3.68(0.76)	3.1(0.76)	3.39(0.79)	0.71
After	4.38(1.3)*	4.26(1.35)*	4.28(1.3)*	4.36(1.3)*	4.32(1.31)*	0.97
Effect size	0.4	1.83	0.78	1.65	1.17	
Workshop 5 (n=41)						
Before	3.53(0.97)	3(0.83)	2.7(0.84)	2.65(1.23)	2.97(0.95)	0.82
After	4.53(0.81)*	4.51(0.81)*	4.43(0.8)*	4.34*	4.45(0.92)*	0.72
Effect size	1.03	1.81	2.05	1.36	1.6	
Workshop 6 (n=50)						
Before	3.41(1.19)	2.56(0.99)	3.89(0.76)	3(0.95)	3.24(0.92)	0.62
After	4.75(0.57)*	4.37(0.93)*	4.75(0.5)*	4.58(0.72)*	4.61(0.72)*	0.72
Effect size	1.12	1.69	1.13	2.19	1.48	
Workshop 7 (n=45)						
Before	3.57(0.83)	3.15(0.85)	2.95(1.12)	3.26(1.19)	3.23(0.92)	0.86
After	4.48(0.5)*	4.4(.65)*	4.48(0.72)*	4.4(0.65)*	4.44(0.65)*	0.89
Effect size	1.09	1.45	1.53	1.13	1.3	
Work hop 8 (n=46)						
Before	2.91(0.55)	2.93(0.71)	2.95(0.72)	2.82(0.73)	2.9(0.65)	0.82
After	4.56(0.50)*	4.41(0.68)*	2.82(0.73)*	4.32(0.72)*	4.44(.65)*	0.85
Effect size	3	2.07	1.54	2.05	2.36	

*Significant at p value < 0.05.
† Means are based on Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree)
††Reliability measured by Cronbach's alpha
§Effect size: The pre-/post-course differences in means in term of standard deviation units.
SD: Standard deviation.

45(82%) of them responded to the evaluation survey. The mean students' satisfaction with the overall performance of the speakers and programme was high at 4.12±0.91 and 4.54±0.89, respectively. The agreement on "Learning objectives were met" that had a mean score of 3.91±0.86 (Figure-1).

Participants' perception of the individual learning objectives of each workshop significantly improved after the programme. Students rated their ability 'to implement change and manage the time effectively' the highest among the objectives sets, and 'to develop creative and innovative thinking approaches' the lowest. Most of the workshops induced a large effect size on students' learning, except the workshop of vision, mission and objectives had a medium effect size (Table-1). Participants' self-reported leadership skills displayed a noteworthy improvement after the programme. According to the leadership skills rating scale used in the study, the number of participants with "leadership skills that need improvement" significantly ($p<0.001$) reduced from 38.2% to 3.6% after the programme, while those with good leadership skills significantly ($p< 0.001$) increased from 32.7% to 78.2%.

Of the 45 participants who responded to the evaluation survey, 29(65%) reported intended changes in their leadership practices immediately after the programme,

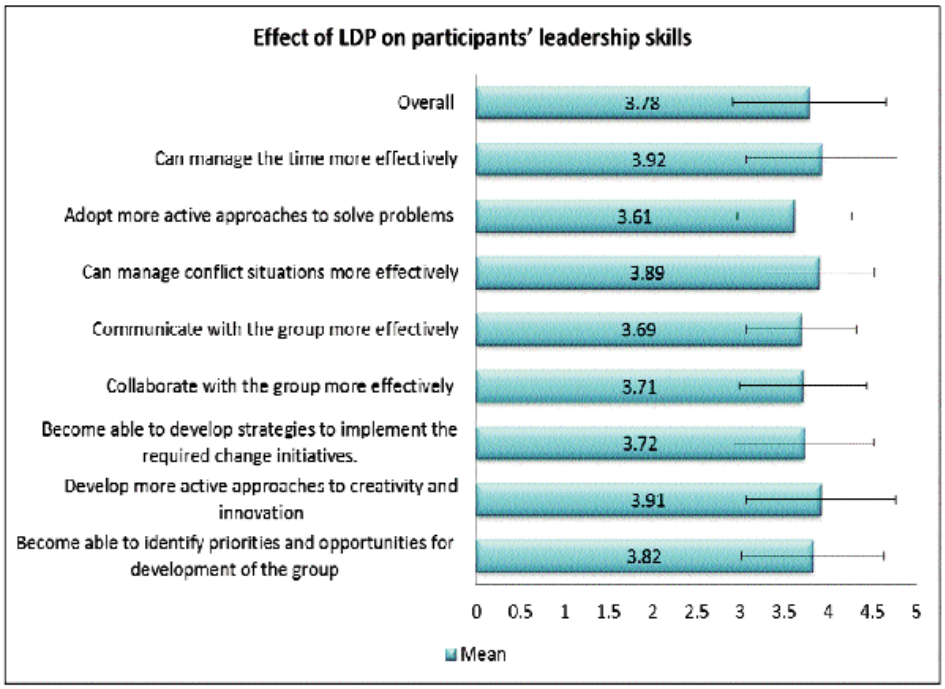

Figure-2: Effect of LDP on participants' leadership skills. Cronbach's alpha of the survey items is 0.872. Means are based on Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree).

and of them 8(28%) reported more than one change. The frequently noted intended change was "application of the new leadership skills they have learned". Other intended changes included: accepting to lead a group confidently, adopting different leadership style according to the situation, caring with motivating the group members to achieve the intended outcomes and seeking for advanced courses in leadership and management.

When asked how the LDP affected their leadership practices, the majority, 10(83.3%) of 12 females and 7(77.7%) of 9 males in the FGD reported that the programme had a positive impact on their leadership skills. Topics that were frequently noted by girls as the most beneficial were time management, conflict resolution, strategic planning and the situational leadership, while boys mentioned strategic planning. "Avoided many mistakes while leading groups/teams" was among the effects induced by the LDP. Those who reported that the LDP affected their leadership skills to a little extent [2(16.7%) of 12 girls and 2(22.2%) of 9 boys] reported that the programme included theoretical experiences and they did not have a chance to apply what they had learned. Factors described by both genders that affected their practices as a leader were lack of team/group specifications in terms of references, expectations and outcomes, while girls added that some administrative and cultural issues as well as leadership personality hindered the application of some leadership skills.

The results expected from the LDP were discussed with the participants during the FGDs. Among the results noted by the participants were "changing their mind to a new concept that leaders are made and not born". They added that such LDPs can help in avoiding the drawbacks of the trial and error approach adopted by many leaders.

The effect of the LDP on the participants' actual practice of leadership was investigated by exploring the changes in practices observed by whom they were leading. Of the 162 students of the third year, 125(77%) noted that the leadership skills of their group leader had been improved after completing the programme. The students gave the highest score (most observable) to the skills of creativity and innovation, and managing the time effectively (Figure-2).

Discussion

Leadership is an inherently relational process of working with others to accomplish a goal or to promote change. General inattention to training physicians in leadership competencies and physicians' disinclination to followership and collaboration are among the factors that provide a strong rationale for developing physician leaders.[15,16]

On reviewing the literature during designing the LDP, it was found that two different approaches were reported by medical schools in order to offer leadership education to students. The first approach is to offer a programme that involves a cohesive leadership and medical degree prospectuses. However, this would require additional years of training, for which many medical schools and students are likely to select or agree upon.[17] Another approach adopted by the School of Medicine at the University of Wisconsin is a longitudinal extracurricular activity with the leadership opportunity with communities, the underserved, and special populations (LOCUS) programme. The programme is not curricular

orientated but it is based on community service.[18] The latter model of leadership training was the one that is partially adopted in LDP described in this study in terms of being extracurricular. Although not being offered through the community service, it could be a coming step for application of leadership skills learned by the LDP participants in the future.

To develop self-efficacy as leaders, to work collaboratively, to manage conflicts and to understand that good leadership requires competence in establishing a purpose and discipline; these are required traits that empowered the LDP through various ranges of leadership-related activities.[19,20] Based on this, a wide range of leadership competences were included in our LDP. Baxter Magolda emphasised that comprehensive LDPs should be based on an active learning pedagogy where learning is situated in students' experiences, where students are validated as knowers, and where there is mutually constructed meaning.[21] This is why in our LDP, active discussion and reflections on what were the participants' practice was a substantial element.

It was found that the participants' satisfaction with the overall programme was high as more than 75% of the students reported an improvement in the group leaders leading skills after the programme. These findings were in line with some previous studies on the LOCUS which was first piloted at the University of Wisconsin Medical School both student and mentor satisfaction with the programme was high.[19,22] The Advanced Leadership Skills in Community Service (ALSCS) selective course adopted at the University of North Carolina School of Medicine successfully integrated into the undergraduate medical school curriculum and had a positive impact on leadership skill development among medical students.[23] Feedback from participants indicated a yearning for more longitudinal training and counselling.[24]

The study, however, has its limitations. Being a single programme in a single institution means conclusions of this study cannot be generalised. The survey assessed self-reported behaviour, which should be supplemented by studying long-term effect of the programme on participants' actual behaviour. Future challenges include: engaging the students in community service projects that allow them to practice what they've learnt under mentor supervision. The long-term effects of the programme on participants' satisfaction and effectiveness as leaders are essential in understanding the value of the programme, and other programmes that tend to develop medical students' leadership qualities. At a future point, comparison of participants with a controlled group of nonparticipants would be most beneficial.

Conclusion

Early experience with the LDP yielded positive results that other medical schools, attempting to address such a substantial area may find valuable. Further programme development and expansion to fully address this important organisational need are required.

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Conflict of Interest: None

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