aspects of HR-QOL. Nonetheless, effect sizes were small, other than in VT [29]. In a Canadian study, three clinical characteristics—having had CNS or bone cancer, more than one treatment series, and two organs dysfunction—were independently associated with poorer QOL in the physical dimensions [14]. Only survivors with two organs with dysfunction reported poorer QOL in both the physical and psychosocial domains. In our study, multivariate analysis-revealed late effects were common risk factors for lower PF and GH subscale scores, neither SCT nor RT were risk factors for lower PF and GH subscale scores after adjusting.

The limitations of our study are as follows: (1) a limited number of subjects were analyzed, (2) patients with solid tumors were underrepresented, compared to those with hematological cancers, (3) a selection bias may have been presented, because patients were not recruited through random sampling and (4) some patients' siblings were inappropriate as controls because they experienced significant psychosocial distress during the patients' cancer experience. Nonetheless, our report fills a gap in the published literature—and usefully so, given the numerous articles in Japan that survey social outcomes and QOL of young adult CCSs.

5 Conclusions

Our study revealed that the long-term social outcome of the CCS group was almost similar to that of the control (i.e., their siblings), but a significant proportion of CCSs were at an increased risk of developing poor social outcomes and QOL, thus requiring psychological or social care if they had some late effects.

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